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"LIVE A LITTLE LONGER" THE ROCHESTER PLAN

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Read at the Annual Meeting of Life Insurance Presidents

THIS subject has a triple interest for you: the humanitarian, the economic and the commercial. The humanitarian side interests you personally, as men; the economic side interests you as citizens of your respective countries, whether of the United States or Canada; the commercial side interests you as Life Insurance officials.

The Rochester plan for educating the public in health and life conservation, christened "Live a Little Longer" by the president of the Board of Education—is so absolutely simple and obvious that it reminds one of the hiding place of "The Purloined Letter"; it is so direct it reminds us of snipers; for it takes definite aim, and hits the mark every time without waste of ammunition. We have found such a splendid point of vantage from which to take a crack at the enemy—disease—that I am here to ask you to help place an army of several thousand in this position, instead of just two people, which is the number engaged in Rochester.

The Board of Education engaged two teachers, one a doctor and one a nurse, to give lessons bearing directly on health and life conservation; for example, what diseases are preventable; how to help to keep them from the home, and also, by community effort, from the community; how the body can be made more resistant to disease; how to nurse scientifically when home nursing is necessary; how to observe, record and report symptons; what to do in emergencies arising in the absence of doctor or nurse, and when to do nothing until the doctor arrives; what is proper food for sick and well, and how it should be prepared; how to care for children, keeping them, as nearly as possible, in perfect health, teaching them, as they grow older, that they have a better opportunity to keep their health than has the best physician or surgeon in the world to give it back to them once it is gone.

The classes—to membership in which women 18 years old and over are eligible—are taught in the public schools outside of school hours, that is, between four and five in the afternoon. Evening courses are also to be begun. By giving these health courses in one school after another—or in one group of schools after another. they will eventually be within walking distance of every woman in the city; when it will be time to give them again in the schools which had them first. This is to keep on continuously. The course, as now given, consists of twelve lessons, two a week for

six weeks; and can easily be repeated five times a year in succession, with as many running concurrently as is deemed advisable. To keep the classes down to between twenty and fifty is desirable, as that way pupils are certain to receive greater benefit. This can be done by making the round of the schools with sufficient frequency.

The lessons are accompanied by illustrations or demonstrations, as the case requires. There is the mannikin of the body for physiology; a baby or big doll when the care of the infant is under discussion; a patient and bandages for first aid lessons; a bed—with bedding and patient—for the lesson in taking care of a bed-ridden patient—how to make the bed with the patient in it, giving bed-baths, etc.

The work of operating this plan falls into two distinct divisions: The first, which includes preparation of all the lessons, engaging—and paying—the teachers; that is, the financing of the proposition, deciding upon length, time and place of courses, supplying demonstration material, etc., is clearly the function of the Board of Education. The second, which involves getting the public to attend the classes, has been taken care of in Rochester by civic and business organizations.

At first each of these organizations, as it became interested, worked separately among that part of the public in the welfare of which it was concerned. The clergymen in the Ministerial Association told about the classes from the pulpits; the Chamber of Commerce told about them in its Official Bulletin; the Women's Educational and Industrial Union made the movement a principal activity of its school committee, footed the expense in connection with obtaining local publicity, undertook to interest other organizations, and also sent a postal card announcement of the first course to their entire membership.

Not until the Life Underwriters Association took hold, however, endorsed the plan and immediately proceeded to adopt "brass tack" methods of informing their policyholders about the health classes, did public interest break through the small circle of people who had been nursing the movement through its infancy.

The participation of the life insurance companies—for in the majority of cases the local manager had to get the consent of his company before sending out in the company's name literature advertising these classes—marked a new era.

This is easily explained. People reason that the aim of life insurance companies and of the public is identical in that it is to the interests of both to promote health and to prolong life. They are convinced that life insurance companies would not participate in a movement which is designed to accomplish this unless they were thoroughly persuaded that it would do just that.

Your interest in their health, they argue, does not arise from a desire to sell them something, whether it be predigested food or chest pads, rubber heels or atomizers, sleeping bags or medical books or transportation to a better climate. They credit you with canniness, but not with sentiment. (You probably do not get credit for a fraction of the sentiment of which you are guilty—though this increases rather than decreases your influence with the public in this matter.) They think it the most natural thing in the world that you should be concerned in the lengthening of human life, which is paramount to saying in public health, and so are ready to follow your lead.

Therefore when eighteen out of the twenty-three local insurance agencies represented in the Rochester Life Underwriters' Association began sending out leaflets advising the families of policyholders to take advantage of these lessons, it indicated that insurance companies with practically one accord saw in this movement a sure benefit to the public. People were quick to recognize this, and so viewed it as of more consequence, with a heightened respect.

One direct result of this quickened interest was a conference called at the Chamber of Commerce, to which were invited the President of each of the endorsing organizations, with the President of the Board of Education, the Superintendent of Schools, and the Chairman of the Public Health Committee of the Chamber of Commerce; and this, in turn, resulted in the forming of a "Live a Little Longer" General Committee, on which each of these various organizations is represented by three of its members. The Rochester Medical Association, the Rochester Public Health Association, and several other bod-

ies that would naturally be interested, were also asked to appoint representatives to act on this Committee, which has assumed the responsibility of seeing that there are classes wherever the Board of Education gives the course.

My object in telling you of this plan is not to convince you that it is good; nor that it is practicable. You can see it is both. It has already proved itself both good and feasible.

My object is to convince you that you have the opportunity to change it from: "Live a Little Longer, the Rochester Plan," to "Live a Little Longer, the National Plan." To change the fact from: "Rochester is doing it," to "Everybody's doing it."

Probably none of you would object if while taking care of the interests of life insurance, in those respects in which the interests of all life insurance companies are identical, you could greatly raise the average of national efficiency; prevent a vast amount of human suffering and sorrow; increase the average length of life; and eventually prevent a large proportion of the six hundred and thirty thousand deaths charged up every year in this country to preventable causes. Nor, to turn it around the other way, would you feel particularly depressed if, while doing all this, you could incidentally increase the amount of insurance written, by decreasing the percentage of risks refused; if you could cut down policy loans by reducing a prolific cause of applications for such loans, i. e., sickness; if you could diminish premium lapses in the same way; if you could increase the savings of policyholders.

All this is quite a contract; yet it is not too big to fill. The question is not even, Can it be done? but, Will you do it?

It can be accomplished by setting several thousand doctors and nurses to work teaching several million women. This does not imply that it can be done all at once, nor that the beginning should necessarily be made with thousands of teachers and millions of pupils. A score, or a hundred teachers, a few hundred or a thousand pupils, would be a very good beginning.

As to what these people should be taught; they should be given that knowledge the lack of which causes the most trouble; it might vary in different parts of the country—perhaps even in different parts of the same city. Give the people the information which, if they act on it, will prevent this much-deplored preventable death and preventable sickness.

Now it would not be absolutely unreasonable to propose that life insurance companies should furnish this instruction for their policyholders and the families of policyholders. More than one company represented here by its officials is working along those lines now. And yet you see this is precisely what I am not proposing. I propose that you get someone to do this for you; and then get your policyholders to take advantage of it; that you assemble the various parts of the machine, as it were, crank it, and supply the spark—then lets the Boards of Education supply the gasoline and run it.

The destination is Decreased Mortality in early and middle life, Decreased Sickness, Increased Efficiency. The parts of a superb machine are waiting simply to be assembled:—thousands of potential teachers in our doctors and nurses; and, scattered all over the country, owned by the people, within walking distance of the people, standing idle at least two-thirds of the time, are 267,000 school buildings. The passengers who are to ride in this machine, to this destination, are, of course, the people—your policyholders.

Because we recognize that everyone needs this knowledge, that the lack of it is responsible for the great bulk of what we term "preventable sickness' and "preventable death," the cry is everywhere Educate the Public!

Professor Sedgwick, speaking at your last Annual Meeting on "The Public Health Movement in America; To-day and To-morrow," said:

"We have got to educate and organize. Wendell Phillips used to say, 'Agitate, agitate, agitate.' Our cry to-day is 'Educate, educate, educate.'"

Dr. Eugene Porter, former Health Commissioner of New York State, in speaking at your 1910 Annual Meeting, said:

"But if the prevention of disease is to be the crowning glory of our civilization a campaign of education must be undertaken. The expert knowledge now possessed by our trained sanitarians and expert laboratory workers must be carried to every home."

Dr. Osler says, "What is required next is popular education—education not in disease but in health."

Dr. Oscar Dowling, speaking to your body in 1911, said: "At present the people do not understand the close relation of health and efficiency . . they are ignorant of the means of prevention and the economy of preventive measures."

The World's Work, quoting from a letter written by a prominent member of the medical profession to Harvard's Department of Public Health, says:

"We are continually asked, 'If disease is so preventable, why is it not prevented?' The answer is, 'Because of the general ignorance of the problems concerned.' The doctor of to-day is trained rather to relieve than to prevent suffering. To remedy the existing state of affairs we need, first of all, a diffusion of an immense mass of useful knowledge that has accumulated as a result of the careful scientific work of the last two decades."

Edward Devine, in his "Summing Up" —the last chapter in his work entitled "Misery and its Causes," says:

"Freedom from disease, this consummation, so devoutly to be wished, so inseparably connected with almost every other kind of progress, so directly within possible social control, so sadly neglected, so certainly, a matter for national, State, and municipal action, for voluntary cooperation in educational and relief measures, and above all, for the fullest exercise of individual initative and responsibility."

In fact, all over the country prominent sanitarians, educators, health officials, insurance companies, the public press, are crying, "Educate the Public!"

And how are we educating them! We generously allow the new generation to learn from observation what their parents before them knew; we leave them perfectly free to learn from experience. We also permit them, if they feel inclined, to read the numerous delightful articles by Dr. Wiley, Dr. Woods Hutchinson and others, and to hear an occasional lecture by Mr. Flynn or Horace Fletcher. And then we think we have done our best to educate them.

If you wanted to give your daughter an education in music, or art, or stenography or French, would you do it that way? If your son wanted to learn to be an architect, or a lawyer or a doctor or a civil engineer, would he set about it that way! No! When we are really in earnest about educating anyone in anything whatsoever, we take definite steps to have them taught by some person who knows enough about the matter in question to instruct them. In witness whereof look at the people who are in real earnest about learning the latest dancing step.

These other means of education all have their function; they are all absolutely essential—in their place! Entertaining articles by Dr. Woods Hutchinson and Dr. Wiley do their work in creating a first interest in this subject. It is because of the splendid part which the press has played in awakening the public to the need for health education that the time is now ripe to offer it. But it is not the function of any of these other methods of educating the public to take the place of oral instruction from master to pupil.

The observation method—a crude sort of apprenticeship system—also has its place, it is absolutely an essential part of education; but, as Dr. Charles Van Hise, President of the University of Wisconsin, said in a lecture on Conservation, "The fatal defect of the apprenticeship system is that the son does not advance beyond the father." He referred to the farmers of the country who, until recently, were content to learn in this same way. Nowadays the farmer still learns what his father knew, but he adds to that what the soil specialist and the plant disease specialist and the pomologist and the veterinarian, have learned in years of investigation. If he cannot take a full course at some agricultural college, he at least takes a "short course." Now, also, Farm Bureau Agents instruct the farmer on his own farm; they form a connecting link between the agricultural college and the farm. They are teachers.

There is every reason to believe that the principles applied thus in conserving the natural resources of the farm would if applied to the homes, result in conservation of health and life.

There is also the experience route to education. And opinions vary as widely as the poles regarding the value of the experience people get in everyday life; some claiming that it is worth so little that it is as nonsensical to give intelligent people

—who have had the average home experience with sickness—any theoretical knowledge, as it is to expect to teach a man who has never been off Broadway to shoot big game, by giving him a few lessons out of a book. Others claim this same experience is so valuable that the woman of average intelligence has nothing more to learn, having already learned everything worth knowing, by experience.

Both views cannot be right! And, as usual, the truth lies between the two extremes. The experience which every person who is not mentally defective is bound to get by the time he is mature is excellent groundwork upon which to build a structure of health education. But, to expect people to learn all they need to know of this matter from experience, is no worse folly than it would be to set out in a beautiful new touring car for a five-thousand-mile trip, over all kinds of roads, without road-map, blue-book or guide, claiming that one would learn all that was necessary about the roads and the route from experience. They probably would learn a good deal that way—and it would be costly learning.

Yet in this matter of infinitely greater importance, we still defend this method of learning in preference to others. We do this knowing that the person never lived and never will live who can get a new machine when he wrecks his own. And for this first-hand knowledge of disease we pay not only in cold cash, but in time, in suffering and with life itself.

Will you pardon a personal illustration? What we learned in my home about typhoid fever—the oncoming symptoms, how regular typhoid may be contracted from a case of walking typhoid—cost us three preventable cases of typhoid, with six months of continuous sickness, and my youngest brother's life. That is how we pay when we learn by experience. We know—when our particular need for the knowledge is past.

And yet to-day, when the whole country appears to be awake to the need of educating the public in health and life conservation, the great mass of people still learn in this criminally expensive way. We all learn some things this way which we should, and could, learn by some better method—which could be taught us, if there were anyone whose business it was to teach us.

Wouldn't it be wiser to pay the cash to teach the people, to prevent the suffering, and to save the lives? Is there any reason why the women of the country should continue to experiment with the human machines in their care when reliable information is available?

People will tell you that "A little knowledge is dangerous," forgetting that ignorance is a hundred-fold more dangerous, and blind to the fact that if "a little knowledge" is dangerous, it is manifestly a danger from which there is no escape. The danger we need to fear lies not in the word "knowledge" but in the "little." A little knowledge is dangerous when we overrate it—when we do not see the limits of our knowledge—when we think we know it all. The only person who is hopelessly ignorant is the person who thinks he knows enough.

But the people who are self-satisfied with their present knowledge should not be allowed to hinder wiser people from being given an opportunity to learn more. There are right now enough women in every community who want this knowledge to make it worth while engaging teachers to teach them; women who are intelligent enough to know that although they know something, they have more to learn. And the self-satisfied ones will themselves gradually come to realize that even they might add a little to what they had considered a sufficiency of knowledge.

Also, since the most intelligent people will, as a matter of course, supply the first pupils, the appeal, if we are wise, will be made to them. Any woman—or man either, for that matter—would rather do the thing which stamps him as intelligent than that which stamps him as ignorant. To offer this instruction, and to intimate that it is for the ignorant, would be a fatal mistake, for they will not come immediately anyway—and it would keep away the others.

We acknowledge that if health and life are to be conserved, the public must be educated. We admit that if a large enough proportion of the hundred million laymen in the United States and Canada are to be thus educated to make a real dent there must be systematic provision for

education of this character. There is no denying that the method of educating which in practically all other subjects has been found the most efficient—that is, oral instruction from master to pupil—is really virgin ground in this matter of educating in health and life conservation. We see that in this also it can be applied so as to diffuse a maximum of information with a minimum of time, energy and money. We recognize that instruction of this nature cannot fail, incidentally, to make more productive all the other varieties of health education, such as observation, experience, hearsay, reading, lectures and lessons on special subjects, or isolated lectures. Considering all this must we not say: "We have not yet begun to fight!"

For what do we wait? Why is not health education right now being placed within reach of the millions, within walking distance of 75 per cent. of the women in the country, as it evidently could be? For, where one women can leave her home to attend a Mothercraft school, or a Home Economics school or a Nurses Training School, thousands could take advantage of such courses of instruction as are being given in Rochester, were they offered, as there, in the public schools.

Consider, we have $1,221,695,730.00 invested in school property, and that this capital is idle approximately 66 per cent. of the time. Then over against this consider that for lack of educating the public on this subject of health it is estimated that we lose in the United States one and one-half billion dollars annually from preventable disease. Putting it another way, we lose by preventable deaths more than 1,700 people every day, to say nothing of the large proportion of people ill from preventable diseases among the three million people estimated to be continuously sick. Putting it in still another way, we are permitting the average length of life to be shortened by fifteen years.

Here we have at least one and one-half million people sick from preventable causes, largely for lack of health education; one hundred and forty-two thousand three hundred and thirty-two doctors; and one hundred thousand trained nurses, competent to give instruction; and sixty-seven thousand school buildings, most of which have some idle rooms during at least 50 per cent. of the possible teaching hours.

Do not these figures fairly shriek of a ripe opportunity! Is it too much to say that the country is merely waiting to have its attention called to this overwhelming opportunity—for some one to crank the machine, and supply the spark?

And because public movements often wax and wane according to the caprice of individuals, so that we have sudden spurts of fire prevention after a Salem fire, and spurts of disease prevention after a typhoid epidemic, and spurts of pure food agitation after a rotten egg or diseased meat scandal, while between times the good work languishes, we can be fairly certain that if this work is to be assured of continuity and efficient management it must be conducted by a thoroughly organized business interest—which means that it must be directed by business men who have at least some direct financial interest in its effectiveness; also they must be men whose acumen and farsightedness have the respect of men of affairs—of the men who vote the funds to pay the teachers.

The Association of Life Insurance Presidents fills these requirements, reaching as it does every part of the country; with the agents of its constituent companies organized in every locality. Each community undertaking this health education work would, of course, meet the expenses, because they receive the benefit. But the Life Presidents Association could supply an essential which no money can purchase —a perfect organization which is in a position to co-ordinate in every locality of every State in the Union and every province in Canada the various forces which would have to co-operate with each other to make this plan work out perfectly.

Dr. Vaughn at your last annual meeting said, "Ignorance which results in misery to one's fellows is not only a vice but a crime." When a municipality can instruct one thousand women a year in health and life conservation, for the sum of two or three thousand dollars, a sum that anyone who could lay his hands on would willingly part with for one surgical operation, if such were necessary, isn't it criminal to neglect doing this?

Moreover, it would pay any community to furnish this instruction if no one took

advantage of it except your policyholders. For this reason: the most valuable asset to any community lies in its thrifty citizens, the citizens who will make a present sacrifice for a future benefit. And, while it is impossible to draw any straight line between the thrifty and unthrifty, probably the nearest anyone could come to making such a division would be the life insurance line. Your policyholders, that is, represent the citizens worth most to the community, the lives most worth saving.

Here, however, is the significant point. Saving the life of one of your policyholders for one year means for you, at most, one more premium—it means just as many additional premiums as he lives additional years, up to the time his policy matures. But what does it mean to the man, to the family and to the community! A man is worth much more to his community than a life insurance premium; he is worth to his family and friends more than many life insurance premiums, and to himself, more than all his possessions. Therefore, should the Life Insurance Presidents take up this work, and bring to the attention of municipalities throughout the United States and Canada the possibility of systematically educating the public in health and life conservation, and should they provide for these municipalities a good working plan, they would be benefiting these two nations out of all proportion to any benefit they themselves received. While the commercial gain to the life insurance companies would be worth the effort on the part of the companies, the humanitarian and economic gain—the gain, that is, to the individual and to the community—would be immeasurably greater. They would be so great as to place civilization forever in the debt of life insurance.

In Rochester all that was necessary was to point out that this could be done. There must be hundreds of communities that would require no more than this to open their schools for this purpose. Here is an opportunity for the Association of Life Insurance Presidents to undertake the generalship of a great campaign.

SALESMANSHIP AND BUSINESS BUILDING

By G. W. ALLEN

One of the many valuable lessons prepared for the employees of the Consumer's Gas Co.

IN our first lesson we found that man is likened unto a car wheel. We divided the wheel into five parts, namely: Honesty, Health, Industry, Ability and Knowledge. If a man lacked health we showed that part of the wheel as flat. The more deficient he was in any of the other qualities we showed those parts of the wheel as flat. A man not fully efficient in these qualities which are necessary for complete success was sure to have a more or less hard journey through life.

By true success we mean: First—Sufficient money to purchase the necessities of life such as food, clothing, shelter and those things necessary for growth and development, culture, as books, music, recreation, etc.

Secondly—Health, without which it would be practically impossible to enjoy those things which money might buy.

Thirdly—Respect and love of one's fellows without which one cannot procure happiness or contentment.

Gaining money by any other means than through honest endeavor, that is, earning it, does not constitute success. In our lessons we are taking up the subject of earning money—through giving efficient SERVICE.

In our last lesson we found out that we are all in business for ourselves. We all have something to sell. We therefore are all salesmen. If we are literally in business for ourselves, it will be up to us to give not only the goods or work we have to offer in exchange for so much money, but we will have to give a business-creating SERVICE that will end in profit to ourselves, and to the customer as well.

It is impossible for any man to render efficient service unless he fully understands himself.

"Man, know thyself," is an old but nevertheless true maxim, and in our lessons we will study men and analysis of men giving necessary directions which any man, who so wills to do, can use in improving himself so that he can go out into the world and meet and overcome all obstacles that may come his way.

If a business house shows a financial loss during any given period of time a final analysis usually will find the cause of the loss. So then analysis is the door to exact knowledge, and if, after analysis, we apply what we have learned, it will give us power to do those things we so desire to do in order to reach success in business.

In this lesson we divide man into two parts:

First—Body.

Second—Mind.

With the body controlled by the mind, man does many things—he breathes, he walks, he eats, he does work with his hands, etc., but with his mind, man does only three things:

First—He knows; that is, he acquires knowledge, facts, etc.

Second—He feels; that is, his mind gives expression to the feelings or emotions.

Third—He wills; that is, he decides and acts through the willing part of his mind.

The body of man is the means whereby expression is given to the knowing, feeling or willing part of his mind.

It is well said that a man earns a dollar a day from his ears downward; all he ever gets above this rate of pay must come through the channel of mind or brain. The development of the brain or mind of man is therefore a very essential part of man building. A healthy mind means a healthy body, and vice versa.

A salesman's, or any man's power or ability to give service which will end in profit and success to himself, must come from within himself—that is, his success will depend upon the amount of supervision or managing he requires. The more watching he requires the less will be his value to others. The less watching he requires the more will be his value to others.

Men require watching or supervision just in accordance to the number of negative qualities in their makeup. It is therefore seen that errors are what cause the effect of supervision. If men made no errors, or mistakes, there would be no need of supervision by managers, foremen or others.

If a man desires to increase his value he must learn, through an educating process, the means of reducing his negative, or error-causing qualities.

All men have negative qualities. A negative quality is something that has a tendency to keep a man from progressing. In the physical man, we find that health has its negative, sickness; strength has for its negative, weakness. In the knowing part of mind, memory is a positive quality, forgetfulness, is negative. In the willing part of mind, despatch undeveloped results in procrastination; action undeveloped results in the negative quality—inactivity. In the emotive or feeling part of man's mind, we find that faith has its negative, doubt; courage has its negative, fear.

The following picture gives a fair idea as to the situation of the three areas of the brain known as the Intellectual, or knowing part of mind; the Emotive, or feeling part of mind; and the Volitional, or willing part of mind.

In the above illustration we find where a man's knowing, feeling and willing powers of mind are placed. We find that a man in order to work and to think, feel or will rightly must have a healthy body and a healthy mind. Most of us have experienced the effects of ill-health on our body and brain powers. It, therefore, is essential that careful study be given to health, food poison the body, and finally the mind.

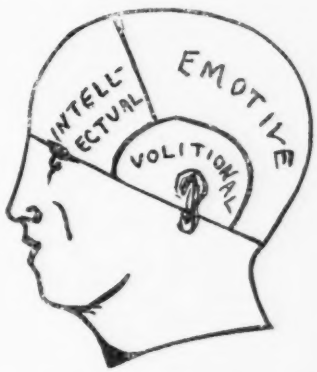
I believe thinking rightly has a lot to do with a man's physical well-being. In fact, it is the first law of physical well-being.

The mind must be fed with pure mental food just the same as the body must be fed on pure material food.

Feeding the mind on negative thoughts actually produces poisons in both the mind and systems of men, just as does impure food poisons the body, and finally the mind.

Positive, or constructive thoughts, actually nourish the mind and end in building the body.

Sheldon says (and I like to quote him because I believe his works on man building and on business science to be founded on true and natural law and well worthy of study by any serious-minded man): "That no matter what you are now, you can become a more successful business



builder. You can increase your power to serve, to the end of satisfaction and profit of both buyer and seller.

"Let nothing shake this conviction out of you. It is only the indolent or the cowardly who think otherwise. It is only the unthinking or the prejudiced who tell you that a business man is "born, not made."

I tell you a business man is born and made, and that the making has far more to do with his success than the gifts with which Nature originally endowed him.

We all have largely the same gifts, if we only develop them.

We will now delve into the subject of analysis of what is called our positive and negative qualities.

Everyone of us have positive qualities, as well as negative ones, just as there is a positive and also a negative pole on an electric battery.

Nourishment and use of the positives in our nature eventually will aid in reducing those negative qualities which pull us down.

Scientists have proven and demonstrated the fact that negative thoughts, such as those which produce feelings of fear, hatred, worry, anger, etc., generate an actual poison—a chemical substance, which although not as powerful as known poisons, yet are just as real—the final effect of which is to contract the muscles, dry up the bodily secretions, and finally destroy the body.

Fill the mind with constructive, body and mind building, positive thoughts and there will be no room or place for the ultimately destroying and dangerous negative poisons.

A few things necessary in order to fit a man for a long life of prosperity and happiness are given as follows:

Breathe properly. Breathing rightly is one of the most important functions of the body. A man can live a number of days, if necessary, without food, water, sleep or rest; but it would be impossible to live five minutes without breathing.

Right breathing is therefore important, because it supplies the body with oxygen, without which life would be impossible.

The more a man breathes the more he lives—and the more vital force he will have in his body.

Wrong breathing results in many ills besides lowering the vitality of the body and mind.

As I said previously, the more and the better pure air one breathes the more vital force he will possess and the longer he will live; therefore, live outdoors as much as possible and breathe smoothly, rhythmically and through the nose.

Drinking properly is very essential to good health. All of the eliminative organs of the body—those which clear off the wastes and poisons—depend for their work upon plenty of pure water. If there isn't enough water these organs work poorly, waste products gather and putrify, the blood is vitiated, the breath becomes foul, and all kinds of disease germs find a fertile soil.

The best time to drink is when thirsty. This is how nature tells us that the body needs water, but owing to bad habits of eating and lack of exercise we sometimes pervert nature, and therefore do not drink enough. Drink water between meals abundantly and frequently, and avoid intoxicants of whatever nature.

The man who does bodily or manual labor, or who is moving about on his feet a large part of the time, will require more water than the desk worker, or those men who lead a more quiet existence. (We could give pages to this subject of drinking, but if the student will take notes of what the instructor says on these subjects much valuable information can be gathered together.)

Next in order comes eating properly.

It has been said that "people dig their graves with their teeth." There is, no doubt, some foundation for this belief, for if we look into the subject fully we find that most of man's ills can be traced to improper eating and feeding.

Food is swallowed whole, or nearly so, washed down by coffee, tea or water; jaded appetites are stimulated by condiments and fancy dishes; unwholesome foods are eaten in large quantities, and many people eat too much and too rich food. As a result of this, natural hunger becomes depraved and perverted, until nothing but an unhealthy appetite remains. A man who has a natural hunger and faithfully obeys its dictates, will have no use for any of the books on diet that were ever printed.

To properly eat one should follow the directions given below:

Enjoy your food. Hold it in your mouth. Chew it. Taste it. Keep chewing it. Keep tasting it. Think and feel that it is good. If you do this faithfully you will build up your health wonderfully.

Next in order comes—cleanse properly.

Our physical condition and even our environment reacts upon our feelings, which, in turn, influence the health. The slovenly man is very likely to be untrustworthy from the standpoint of honesty, and will also lack in health.

Cleansing properly involves body bathing, shaving, cleaning of the teeth, care of nails, attending to getting rid of bodily wastes, care of clothing, shoes, etc.

Proper sleep and rest comes next.

Most men know they are far from being at their best in physical and mental power, if they do not get enough sleep. Therefore, since you, as a salesman or business man, want to be at the very highest point of your faculties, all the time, you must see to it that you sleep properly and sufficiently—just enough and no more. Too little sleep undermines the nervous system and impairs the vigor and clearness of the mind.

To sleep properly the body should be comfortable, free from stimulants or narcotics, and kept in good health by attention to eating, drinking, cleansing, thinking and recreating properly. The mind should be free from worry, grief, fear or other strong emotions.

People often do not sleep right because they do not properly prepare for sleep. Some come in tired right out from a hard day's work, with mind and nerves upset, take off their clothing and drop into bed. This is not conducive to body and mind building sleep. It is better to undress slowly, take a bath or wash the face and hands, brush the hair and clean the teeth. These are not only good habits in themselves, but they give the mind and nerves a chance to relax before retiring. Try this.

I might mention here that exercising is essential to good health. Exercising properly aids in distributing nourishment to the parts you exercise. It is necessary also to the proper functioning of the eliminative organs. It also develops the motor areas of the brain. Natural sports in the open air are the best exercises.

I bring these things to the mind of the ambitious and willing worker in order that he might profit in the business world, through giving an efficient service—built upon the solid foundation of good health, augmented by a close study of himself in respect to his ability, honesty, industry and knowledge.

Take notes of what the instructor is telling you and act upon them:

Answer the following questions:

1. On what does a man's value depend?
2. What is a positive quality?
3. What is a negative quality?
4. What is ability? What is honesty?
5. What is an error of omission?
6. What is an error of commission?
7. Why is health such an important thing in business success?
8. Name at least five things necessary for good health.
9. Define Service.
10. Name the three main divisions of the mind and explain in your own words the function of each.

SOME THEORIES AND METHODS OF VENTILATION

By EARNEST W. J. HAGUE

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IN this paper precedence will be given to a statement of the new theories regarding the uses of ventilation, views quite revolutionary in their character, but which are nevertheless coming to be widely accepted. Briefly, they are to the effect that the purpose of ventilation is not, as we have previously been taught, to maintain the purity of the air and to prevent undue accumulation of carbonic acid gas in any room or apartment. The amount of CO_2 contained in the air of any room has hitherto been regarded as a standard by which to measure the degree of contamination of the air therein. We are no longer to so regard it. Neither is the principal object of ventilation to remove from the apartment matters.—possibly poisonous, exhaled from the lungs. We are now assured that the principal object to be attained by ventilation is the keeping of the body at a proper temperature. It is held therfore that the temperature and humidity of the air are of more importance than its chemical constituents. The poisonous matters referred to previously we are now told are non-existent, not having been demonstrated after careful experiment. The central feature of the new theory is that the body tends constantly to accumulate heat within itself and that if this constantly accumulating heat is not removed the result is a feverish condition causing fatigue, toxic poisoning, and, under extreme conditions, very grave results. The object, then, of ventilation is the removal of this surplus heat from the body by bringing in contact with the skin constantly moving air, of a temperature slightly cooler than the skin, and of the right degree of humidity. The body is thus cooled (1) by the air on the inside of the lungs, (2) by the air on the outside of the body, and (3) in hot weather by the cooling effects of the evaporation of perspiration. Oxygen is, of course, the vital element, but it is pointed out that "there is absolutely less oxygen in a cubic foot of air from the upper Engedine, or the top of the St. Gothard, than in the same volume from a gallery of the lowest music hall in London in the last hours of Saturday."—Dr. Kerr.

These views are no longer in the experimental stage. Experiments begun some ten years ago by Professor C. Flügge at Breslau have been systematically followed up by German, English and American investigators and now bid fair to revolutionize our systems of ventilation.

In speaking on this question at a sessional meeting of the Royal Sanitary Institute, England, recently, Professor Kenwood used these words:

"While he did not dispute that the tests made by Flügge, Haldane, Leonard, Hill and others, explained the real nature of the agencies which co-operate to produce the evil effects of foul air, he could not subscribe to certain deductions which were commonly made from these tests. The value of fresh air was not entirely due to its effects in removing heat from the body, and he could not agree that 'by washing, cooling, and moving the air the health conditions of fresh country air can be reproduced anywhere.' As the air thus treated has generally a continuously uniform temperature, rate of movement, and humidity, it differed in essential respects from country air in the open, which stimulated and braced the system by reason of its convection currents of slightly variable temperature, rate of movement, and moisture. To that circumstance in the main he attributed the special hygienic value of open country air."

And Sir William Collins at the same meeting said as follows: "He believed the legislature was never so willing as now to listen to the last word of science; but the latest was not always the last. He understood that we were to regard the proportion of CO_2 in air, as the result of respiration, no longer with the antipathy which used to attach to it. Similarly sewer gas was now pronounced to be more free from organisms than the outside air. Another school of hygienists denounced exercise, fresh air, and cleanliness as obsolete superstitions; while from certain eugenists we learned that the children of the inebriates were more likely to be healthy than the children of the sober. Those doctrines bewildered the public, and caused the legislators furiously to think."

There is a tendency, especially in America, to rush to extremes, as for instance in the case mentioned by Dr. Kerr of a large gymnasium where the air has been washed and re-circulated with fans for over a year, no fresh air being taken in (?), the air being stated to be always fresh and cool.

It may be as Sir William Collins says, that "the latest is not always the last" and that we have yet to discover the true principles of ventilation. Perhaps we may see tried some system of air treatment by means of light rays such as is now used for water purification.

This new school of thought will, however, undoubtedly lead to new standards of efficiency of ventilation being adopted, and, whilst engineers will continue to use the thermometer and hygrometer; will calculate in terms of cubic feet of fresh air per hour supplied; and conduct tests as to the chemical constituents of the air supplied, something more than this will be demanded—is, in fact, already demanded, viz., that we shall consider the effect produced on the actual occupants of the rooms being ventilated. In a very exhaustive article entitled: "The Effect of Humidity, Temperature, Air Movement and Barometric Pressure, Pulse, and Respiration of Children Under the Influence of Various Forms of Ventilation," Dr. B. Raymond Hoobler, of New York, brought the subject very fully before the Fifteenth International Congress on Hygiene and Demography held in Washington, D.C., last year. He quotes many eminent investigators, amongst whom is W. Gilman Thompson. Dr. Thompson suggests that physiological tests be applied as distinguished from the physical tests hitherto in use. The tests advised are: The use of the nose; blood pressure tests; metabolism tests; volume and composition of expired air; symptom tests as blood tests, headache, indigestion, dyspnœa, etc. His findings are summed up as follows:

1. The human body is affected by the air which surrounds it as well as by the air which is breathed.

2. Air conditions which most affect the circulatory system of the body are amount of moisture, degree of temperature, force of air movement, and atmospheric pressure.

3. A marked increase in relative humidity tends to depress the circulatory system and to decrease the blood pressure.

4. A marked decrease in temperature tends to stimulate the circulatory system and increase the blood pressure, particularly in those diseases in which there is instability of the vasometer system, as, for example, pneumonia and tuberculosis.

5. A marked increase in barometric pressure tends to increase blood pressure.

6. When the three factors—temperature, humidity, and barometric pressure—are considered together their influence on the blood pressure is in the order stated.

7. The effect of temperature, humidity, and barometric pressure on the rate of pulse and respiration is slight when variations are within narrow limits, such as may occur in the average hospital ward.

Under conditions where temperature and humidity are greatly increased there is a marked increase in rate of pulse and respiration. A marked fall in barometric pressure tends also to increase the pulse and respiration rate.

8. The method of ventilation best adapted to the maintenance of blood pressure is that which most nearly approximates out-of-doors conditions.

Kindly note No. 8 and see how we get back to the first principles. The writer is firmly convinced that the more simple

the means of ventilation are the more satisfactory are the results obtained. Unfortunately even in dwelling houses we have to fight for the open window. In many parts of Canada, especially in the poorer class of houses, it is the exception rather than the rule to find that the windows can be opened both top and bottom. The top sashes are generally fixed and immovable. How is it possible to ventilate the upper portion of a room with windows of such a type? Then there is the vexed question of storm sashes. There again we find that health is sacrificed to cheapness, and that instead of such storm sashes being constructed with small subsashes top and bottom, or the whole of the sash being suspended from the top on hinges in such a manner that they may be opened, we find two or three small augur holes bored through the bottom of the storm sash and sometimes even these are omitted. The result is that many rooms remain unventilated throughout the winter months.

The moment that we shut ourselves into any kind of a building we part company with natural conditions and the problem of ventilation commences. In our dwellings we certainly need plenty of windows on all sides of the building and such windows must be rightly constructed. These are the more necessary because of the lack in most houses of the open fireplace and chimney, which forms such an important means of ventilation in milder climates. When we begin to construct schools, churches, office buildings, theatres, etc., it then becomes necessary to adopt means for mechanical ventilation. There are to be found in some cities, notably in California, large schools built one storey in height in the form of a hollow square surrounding a central plaza, which can be used for a playground or garden and in which buildings every room has windows on both sides with plenty of air and sunlight. But such buildings are, sad to say, the exception rather than the rule; the price of land in our large cities being prohibitive.

A great deal can be done in the designing of schools and other buildings to encourage the simpler form of cross-ventilation by means of windows as distinguished from the more complex systems of mechanical ventilation. This reversion to simplicity, as practised in many English schools, consists of plans providing for all corridors to run along one side only of the school rooms, the corridors themselves are against an outside wall. Windows are constructed in the corridor walls on both sides, one side opening to the outside air, and the other to the school rooms. Where schools do not exceed one storey in height the corridors are ceiled over at a less height than the rooms so that when the upper sashes of windows on opposite sides of the corridors are open, fresh air may blow straight across the top of the corridor into the school room, or vice-versa. Windows of various kinds are arranged for so deflecting the air as not to cause draughts. In country schools which are not too large, where the surrounding air is pure, this system works well, but in cities and towns the entrance of dust and noise through the open windows are decided disadvantages. City schools, moreover, as a rule cover too much ground to permit of such construction.

The varying atmospheric conditions, barometric pressure, direction and velocity of wind, obstructions caused by proximity of neighbouring buildings, variations of temperature both inside and outside the buildings, and changing humidity, etc., have led heating and ventilating engineers to devise mechanical systems of ventilation which shall be independent of such variations.

On this side of the water the tendency is for our schools, office buildings, apartment blocks, etc., to become larger and still larger, and in such buildings a mechanical system of ventilation is a necessity. It is most important to exclude fine dust from the interior of buildings and the fully modern systems by which the air in entering is passed through a water screen is one of the most effective methods of eliminating impurities. The calculations necessary in order to produce a perfect system are very intricate, as provision has to be made for the warming or cooling of the air as may be necessary, for giving to it just the right degree of humidity, and for the extraction of the

vitiated air without destroying the perfect balance of the ventilating system.

For some years during the experimental stages, all sorts of intermediate systems have been tried out, such as the use of exhaust fans alone; combined systems of heating and ventilating; filtering of the incoming air through cloth screens (very frequently to be found in a filthy condition); systems which passed the air through water screens as it entered at a low temperature and then over heating coils instead of reversing the process in order to obtain sufficient humidity; systems taking in air at ground level where a much greater proportion of dust is found. The newest systems as found in some of our modern buildings are a vast improvement on the earlier experiments. Even in the best systems, however, experts agree that there is a something lacking. Even when chemically pure and of an agreeable humidity there is an unmistakable difference between air so treated and the natural fresh air as found outdoors. One writer describes an experiment of the late Lord Kelvin who extended a wire from inside his house to the outside and found that he had a positive electrical result. On bringing the end of the wire inside the room he obtained a negative result. It is claimed that a negative electrical influence in the air we inhale is conducive to debility.

Of course a plenum system implies also that proper results depend on the proper maintenance and operation of the plant, and this leaves us dependent on machinery and the oftimes unreliable human agency.

No ventilating system should ever be allowed to interfere with the necessity of providing every occupied room with windows capable of being opened to the outside air. They may not be much used for ventilation—in fact, with a plenum system they cannot be so used without interfering with the balance of the system. Their use is, of course, to supply daylight, and, if possible, direct sunlight to the room, the beneficial and germicidal action of such light rays being indispensable. This is why a moving picture theatre, for instance, if not kept spotlessly clean, may become a very good breeding place for pathogenic organisms. A picture theatre without windows one could understand, but what shall be said of sleeping or work rooms without windows? The writer recalls one case of a public building containing 45 rooms without outside windows, 30 of them quite dark. These rooms were used for sleeping rooms by four persons in each, and were designed so as to be ventilated mechanically by ducts and fans. The fans had been out of repair for a long period and could not be used. Another large hotel extends for 40 feet below ground level. There are three basements. The first is partly above ground, but the other two are entirely below ground level. In the middle basement there is maintained a large laundry employing many hands. In fact some 300 persons spend a large portion of their time daily in this basement. It is, of course, ventilated by a fully modern plenum system, but can any system of ventilation make up for the loss of daylight? Such occupation should not be permitted.

To sum up then. Let us have the simplest system of ventilation possible having regard to the building and its uses. If a system of mechanical ventilation is decided upon let it be the best possible and let us insist on its being at all times properly operated so as to be effective.

There is no doubt but that we have not yet learned all that we shall about the principles involved in ventilation and vast improvements will yet be made in the methods employed.

REPLACING THE CANNON FODDER

By CHARLES B. SUTHERLAND, M.B.

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"To be a good animal is the first requisite to success in life, to be a nation of good animals is the first condition to national prosperity."—Herbert Spencer.

IF there is one point that is generally conceded in all discussions regarding the aftermath of the present war it is that there will follow a marked advance in socialism.

Not that proletarian socialism that we have known, founded on class consciousness and class struggle, but a socialism founded on a most complete and highly organized co-operation of all elements, all interests and all agencies which in their combination make up national structures.

The necessities of war have given us experiences of "public socialism" where the whole people have been called upon to assist in the production of commodities and the promotion of the general well-being.

The realization of this will tend to bring together more and more in efficient co-operation the individual, the quasi-private corporation, the public corporation, and the government.

One sure result of this war is going to be a stimulation of the thought of the more serious-minded in every country towards ways and means by which the problem of life quality, its protection, and its propagation may best be solved. In doing this there will be difficulties, but none of these will be insurmountable.

Perhaps the most likely body to be touched by this new condition of affairs that will confront the various nations of the earth will be the medical profession. For to them the people will look for guidance in the various steps that will be necessary to conserve to the greatest extent possible the quantity and the quality of the present stock and that of the generations to be born. Much has been accomplished already along these lines through a close connection of the state and existing university hospitals. We owe a great deal of our present knowledge along these lines to the unselfish devotion of members of this profession to research work, and the careful compilation of results, in new lines of effort, all directed towards the accomplishment of this object. Recognition of the value of the scientific workers in medicine must be more general. Their place in modern statecraft must be more generously acknowledged and their demands for more liberal appropriations and more drastic legislation must meet with a more liberal response. Our future success as a nation depends largely on the place accorded to the medical authority in the legislative bodies of the nation.

The mere mention of this brings forth a volley of objections.

A certain element of society immediately becomes apprehensive of the loss of liberty. We are told that in the interests of efficiency minute and unwelcome regulations will be imposed upon individual life and effort. A degree of coercive control will be established which will end by making individuals mere cogs in the machine. We shall hear the argument that the loss of individual initiative and personal self-reliance is too great a price to pay even for supreme efficiency and maximum production of material comforts.

We have already seen precipitated by this war an era of sober thought of the individual's rights and responsibilities.

The co-operative instinct has already grown to that point that it has in some cases, combined government action with individual initiative for purposes of economic production, education, the promotion of public health, and the administration of justice.

Human society is rapidly recognizing the efficacy of mutual aid, or team work, in the struggle for existence and the pursuit of happiness, when contrasted with individual cleverness.

The result of this must surely be a wider political organization of mankind, a more serious attention to the more material things of life, and a keener quest for education in matters that have a direct bearing on the national expenditures.

That over emphasis of material comforts, which has been so marked a feature of recent human history has already been largely replaced by an earnest devotion to national obligations and international expressions of sympathy.

Perhaps never in the history of the civilized world before has there been the call for self-sacrifice, unselfish living and wide teaching that there is to-day. Those who have had the good fortune to grow up under the most modern and beneficial influences, and those of the best schools of science must spend every effort in finding out, and then teaching to their less fortunate fellows, how race quality can best be utilized, augmented and handed down to the advantage of posterity.

The greatest menace to race regeneration to-day is our ever-increasing population of inefficients and feeble-minded. Wherever one turns it stares him in the face, and those actively interested in charity and relief work are stunned with the realization that in our cities we are rapidly passing from the problem of the "unemployed to the problem of the "unemployable."

There are four great factors in feeble-mindedness and insanity in Canada and the United States—heredity, alcohol, syphilis and immigration.

Three out of these four fall entirely within the scope of the medical profession when it comes to the devising of means by which the further entrance of feeble-minded or factors of feeble-mindedness, and propagation of their kind by those existant here, may be prevented.

In the whole four the intervention of organized medicine, under the leadership of men of the type of Colonel William Crawford Gorgas, whose remarkable record of achievement in Panama has thrilled the scientific world, offers the only practical solution of what is proving to be, as more and more the light of scientific investigation is being brought to bear on it, the problem of all problems for which civilized nations the world over must find a solution.

As a young and growing nation we could perhaps with considerable advantage study the history of the United States, a country developed largely upon the lines on which we are basing our development, and from some of the disastrous results of their inexperience draw a few lessons to guide us in our future progress.

In the United States to-day it is estimated there is one mental defective to every 184 normal individuals.

The cost of the care of the insane in institutions in that country was given for the year 1912 as about thirty-two million dollars. An amount equal to or greater than the cost of the upkeep of the Panama Canal and exceeding the amount expended annually for all the executive, legislative and judicial departments of the Federal Government.

In studies of social economy an adult between the ages of 18 and 45 is given a value to the community of $700 a year. On this basis the annual economic loss to the United States through insanity was over one hundred and thirty million dollars. Add to this the institutional cost and you have a sum equal to the entire value of the wheat, corn, tobacco, dairy and beef products exported from that country during the year.

It is computed that the number of students in all the colleges and universities of the United States is exceeded by the number of patients in hospitals for the insane.

Considerable attention has been devoted of late to the question of the insane and the feeble-minded by both the scientist and the statistician, and the mass of information that has been afforded has been eagerly studied by the statesman, the civic administrator, and the layman in general.

Little study is needed to see that the blame for a considerable proportion of their insanity and feeble-mindedness may be truly attributed to national unwisdom in importing as ancestors of their future citizens, aliens who have been furnishing them with a percentage of insanity twice that furnished by their own people.

To be fair, it must be acknowledged that it is only in the last few years that much of the information which has reduced the judging of the immigrant to a com-

paratively exact science has been given to those who are responsible for this branch of the Government service. But we are not concerned with criticism, we are only concerned with results; it is immaterial whether these results are from ignorance, or from neglect to use the information that was available.

The future is before us; men of science have afforded us the means of avoiding the mistakes of our cousins to the south, and of pulling down the handicap that our ignorance or apathy has imposed on us to date.

With the information we now have, we have but ourselves to blame if we allow our country to drift into the condition that the State of New York finds itself in to-day. In this State, where this problem has probably received more attention than in any other State, a recent report of the Committee of Visitors of the State Charities shows that there are at least 32,000 feeble-minded persons among its total population of about ten millions.

Of these 32,000 only 4,900 are being provided for, leaving at large, without any protection or supervision whatsoever, 22,600. Seven thousand of these 22,600 are girls and women of the child-bearing age, and carefully compiled records in some places have established, with a fair degree of accuracy, the fact that they are producing children at nearly twice the rate of normal women. Scientific investigation, and the tracing of hundreds of family histories for many generations has demonstrated that the greater proportion at least of these children will inherit the feeble-mindedness of their parent and go on adding to the already tremendous burden of irresponsibles and mentally deficient of the State. The surplus of the 32,000 are inmates of institutions and prisons, where they represent a constant burden for their maintenance.

A scrutiny of the State expenditures for the year brings home the seriousness of the problem from the standpoint of the man of the street.

The appropriation for the upkeep of the institutions of the insane was 23 per cent. of the total. Add to this the greater part of 8 per cent. spent in the upkeep of epileptics, feeble-minded, blind, crippled and disabled, a large proportion of whom might be intimately associated with the feeble-minded classes, and you have the maximum of all appropriations for the care of these various kinds of derelicts of humanity.

Perhaps the real seriousness of the problem is more apparent in a comparison of this appropriation with those for more constructive purposes.

Education received but 24 per cent., public works and conservation but 13 per cent., and health and quarantine but 1 per cent.

Tracing the cost still further one finds that 4 per cent. of the total appropriation of the State went for the upkeep of prisons and reformatories.

Within the last few years many superintendents of prisons and reformatories in different parts of the world have been studying the mental condition of the men and women who have come under their charge, and they have been almost universal in the opinion that a considerable proportion of all criminals can be classed as feeble-minded. One of the leading American investigators is responsible for the statement that nearly 50 per cent. of all prostitutes are feeble-minded, and that the same is proving true of paupers, n'er do wells and habitual drunkards. In short, the more we study them the more we find that the great majority of those who go to make up the social problems of our cities and towns can be demonstrated to be feeble-minded. Conclusive proof of this is being furnished in some of the larger American cities to-day by the application of simple but accurate tests, by which it is possible to demonstrate the relation between the developmental status of a patient's mind and his age and growth of body, to those derelicts of humanity and criminals who go largely to make up the daily grist of the average police court. Already this has demonstrated, almost beyond the possibility of argument, that our methods of dealing with a large class of offenders have been entirely unjust and useless, and must be completely changed if we would attain the results towards which our present system of courts are aimed.

For example, in one State training school for girls in Illinois, with a population of 400 girls, 97 per cent. of those committed for immorality were found to be feeble-minded. Of all the inmates 89 per cent. were found to be feeble-minded, 6 per cent.

were backward mentally, and but 5 per cent. were normal. In another reform school for girls 72 per cent. were found to be feeble-minded. In a New Jersey State home for boys over 50 per cent. were of the feeble-minded class, or at least mentally backward.

Briefly, what this means is that a majority of our human derelicts have the bodies and age of men and women and the minds of women and children of four of five. Unable to hold their places in the struggle of life they abandon themselves to the "easiest ways" and rapidly become charges on the communities into which they happen to be thrown.

The women of this class are without doubt the foundation stones of our vice industry and our most prolific sources of immorality. As an additional evidence of their danger to society, it must just be mentioned that sixty per cent. of all the girls admitted to one State institution for immorality were found to be suffering from diseases associated with the social evil.

That such a condition of affairs could exist in any educated community seems appalling, but nevertheless the sincerity of those who have made these statements and the truth of their assertions cannot be doubted or disproved.

There is abundant evidence that Canada is already face to face with this problem, and in the interest of the generation to come it is the duty of every citizen to do his part in forcing attention which must result in active measures to adequately handle it and prevent if possible a repetition of the history of the United States in this country.

The first essential is the strengthening of the medical inspection forces attached to our immigration ports of entry.

Scientists have supplied us with simple and easily applied tests of the mental capacity of the strangers who are applying for admission within our gates.

They have given us efficient and almost indisputable tests for the presence of the specific disease that is so frequently the forerunner of insanity, mental and physical disability, and degeneration in the future generations.

Comfortable and convenient quarters must be established at all main ports of entry where immigrants may be quartered for a sufficient length of time to allow careful inspection for all signs of stigmata of degeneration.

Perfectly equipped and adequately maintained laboratories must be established wherein all manner of necessary scientific tests may be quickly and accurately carried out. Medical examiners who have had a special training in the diagnosis of mental diseases must be attached to the staff.

Men of undoubted ability for their special line must be secured and the salaries must be made attractive enough that those entering these services will have some inspiration to develop their talents and their knowledge to the greatest degree. Permanence of service must be encouraged in every possible way that the efficiency of the service may be raised to the highest point.

Either the Provincial or the Federal Governments must arrange for the service of expert alienists at convenient points, to whom the repeaters of our police courts, habitual drunkards and the chronic charges of our various charitable organizations may be passed for examination and standardization of their mental capacity. Coincident with this move must be taken up the question of the establishment of farm colonies or institutions to which all feeble-minded may be sent.

Experience has demonstrated that these apparently hopeless wrecks of humanity can be developed into a high state of efficiency in one or a limited number of lines of work and under proper protection and supervision are quickly converted into happy, useful, contented human beings, quite able to earn the cost of their upkeep and living under conditions much superior to those under which most of them live under existing conditions.

Most of these farms and institutions for the feeble-minded can be made to be almost, if not wholly, self sustaining. One of the parent farms in America has been described as giving one the impression that it was some great private estate, and every bit of the work done on it has been done by feeble-minded men and women under proper supervision. The initial outlay is more than repaid in the lessening of the pressure on the police funds and on the various charity and relief funds, and by reducing the cost of handling the cases

in the courts of justice and of caring for them in our prisons and reformatories.

I know there is an inherent tendency among various classes to ridicule any attempt to "take stock" in the business of running a nation. They refuse to believe the auditor of human results when he tells them that the offspring of one female derelict, very similar to the type that we are passing through our police courts and rescue homes every day, when traced for seventy-five years, were found to have cost the State over a million and a quarter of dollars in that time. That from another feeble-minded servant in a little country hotel was traced a descendancy of four hundred and eighty, all but forty-six of whom had become a burden on, or a menace to, the society of their districts.

They say it is all rot when you tell them that every day immigrants are being slipped through that will probably each have cost our children and our children's children ten thousand dollars a year when their records and the records of their descendancy have been written.

Against the theoretical argument of the layman that environment is all that these unfortunates need, comes the black and white records of scientific study and investigation. After fourteen years of careful training of one girl, it was found that she had developed every faculty that would make her attractive, but the results of value in mental discipline or self-control that would allow her to be thrown on her own resources were absolutely negative.

Her instincts and her appetites were diametrically opposite to the life that her mentality would afford her and released from the control of this institution she would surely become the prey of evil men or women and slowly sink to a vicious, immoral or criminal life.

There is no doubt this girl is but a type of the thousands who go to make up some of the most serious problems we have to solve in the regeneration of the race, and the lessons we have learned from the study that has been made of her case should be of great value in the consideration of methods by which the "cannon fodder" of the various nations can be replaced.

It is an unfortunate characteristic of the lay public, that they are able to witness every year the sacrifice, by preventable diseases, of thousands of lives, the wrecking of as many more, and the piling on those least able to bear them of economic losses running into millions of dollars, and complacently attribute all to acts of Providence.

The eyes of the world have been focused on commercial conquest, but the commercialized man is fast giving way to the socialized man of service.

This is the day of the man of science, the man whose attitude is above all things a disinterested one, who investigates with an open mind, and whose work is continuously progressive. Mankind is being taught to take experience in serious earnest, "for its own sake," to subordinate personal interests to the pursuit of truth. The opposition of the quack and pseudo-scientist is being rapidly worn down by the results that have been, and are being, achieved by the forces of prevention of disease and crime.

H. G. Wells prophesies: "When the intellectual history of this time comes to be written, nothing will stand out more strikingly than the empty gulf in quality between the superb and richly fruitful scientific investigations that are going on and the general thought of other educated sections of the community."

He tells us that scientific men, in their own field, think and work with an intensity, an integrity, a breadth, boldness, patience, thoroughness and faithfulness, that puts their work out of all comparison with any other human activity. Such men have placed the handwriting on the wall in figures that we Canadians may read and the curse of our children and our children's children will be upon us if this does not spur us into action.

The world is said to be entering on a forward movement of humanity, when lives will count for more than dollars. The call of the true patriotism comes to you to participate in this movement. Ponder well your answer because on it rests largely the future of this glorious Canada of ours.

ABSTRACT OF TELLSCOMIAN LECTURES

Before the Medical Society of London, on Dysentery.

By DR. F. M. SANDWITH

DYSENTERY, an acute diarrhœa, with ulceration of intestines, the passing of sloughs of mucous membranes and marked tenesmus, is a disease of bad water, dirty camps and famine. In the Civil War in the United States the North lost 37,794 men from dysentery. In the Franco-Prussian War the Germans had 38,652 cases and 2,380 deaths, and in the South African War, 1899-1902, we had 38,108 cases and 1,342 deaths. In Japan, in 1894, in the war with China, 300 men died of disease for every 100 men who died of wounds. In the Russian war of 1904 they lost 25 from disease for every 100 dead of wounds, and the improvement was secured by teaching the soldiers in peace time how to avoid disease, and relying on his carrying out these regulations during war. Every Japanese soldier is taught that the most disgraceful illness is one brought about by disobedience to orders; by drinking dirty water, to take an example.

Dysentery was described by old practitioners as a rheumatism of the intestines, it was also ascribed to moist cold, and it was asserted that "nothing a man ever put into him would ever give him dysentery." But about 1895, it began to be realized that dysentery was a water-borne disease, we also now think that like enteric fever it may be carried by food contaminated by flies, and it is communicable from man to man. Still the vast majority of cases are infected from the water supply, and the disease can be prevented by care. In the French endeavors to build the Panama Canal, 3.79 per 1,000 of the workmen died annually of dysentery, but Surgeon-General Gorgus and his American brethren cut that death rate in the very same region down to 0.6 per thousand; and for 1913 it was only one in ten thousand.

Dysentery, is either amebic or bacillary, or both. Amebic dysentery was first discriminated by Losch at Petrograd in 1873. When Koch was working on the cholera bacillus in Alexandria in 1883, he encouraged investigation, and Kartulis examined 500 dysentery cases, finding amebae in the fæces, and in the intestinal walls, also in the walls and in the pus of liver abscesses. Patients with other diseases only were exempt. Osler, in 1890, at Baltimore found amebæ in a case from Panama. The faeces of such cases injected into the rectums of cats set up dysentery. As for human infection, the incubation is from one to three months, and people can act as hosts for the amebæ without suffering from the disease.

There were in Japan, in 1897, 89,400 cases of dysentery, with 22,300 deaths, so Shiga had plenty of material to work on. He investigated many of these cases, and in 1898 he found a particular bacillus, now named after him, in the fæces or on the intestinal mucous of 36 patients. In certain cases it was agglutinated by the patient's blood. In 1900 Flexner found Shiga's bacillus at Manila, and also another different, but closely resembling Shiga's bacillus, but named after himself. Most of the dysentery of the tropics is amebic, but mixed cases occur. Prison and asylum dysentery is generally bacillary, as are usually those cases occurring in temperate climates.

Two races of amebæ occur in the intestines. One, Entamoba coli, is harmless; it merely lives in the intestines, but does not burrow into the walls and cause ulcers. It reproduces itself by simple division, or by forming cysts, which divide into eight daughter cells. The pathogenic ameba, Entamoba histolytica, invades the tissues. It reproduces itself by simple division, or by forming cysts, which when they reach their next host divide into four daughter cells. The Entamoba does not itself live long outside the body, so the race is kept going by these cysts, of which enormous numbers may be passed in the stools, and this whether the host is suffering clinically from dysentery or no. The healthy

person so infected is termed a contact carrier.

When the disease develops the ulcers attack the large intestines only, but may attack it throughout its length, areas of healthy mucous membrane occurring between the ulcers. The amebæ probably work their way up a gland duct, burrow in between the cells, get between the muscular fibres and even into the veins, through which they reach the liver and set up abscess.

The symptoms are diarrhoea, with mucus and blood, tenesmus occurs only if the ulcers are near the anus. The nature of the disease is often missed for want of examination of the faeces. They must be shaken up with a large volume of water, the top poured off and the washing repeated and repeated till all faeces are washed away. Then the sloughs become apparent, varying in size up to that of a man's head. They often have much the size, appearance and consistence of a preserved oyster. In the search for amebæ the stool should be examined while still warm, and especially after a dose of salts. The only drug is ipecacuanha, or its derivative, emetine. If ipecacuanha, 30 grs. one night, 25 grs. the next, and so on for a fortnight, or emetine, half a grain morning and evening (hypodermically) for a week.

Bacillary dysentery has a shorter incubation, perhaps a day, and may attack the ileum as well as all the large intestines. The mucus membrane is swollen and re-crossed on its projecting transverse folds, there is ulceration and a dark green false membrane forms. The ulcers are not punched out like those of amebic dysentery, and death is more generally due to toxæmia not so often as in amebic dysentery to perforation and peritonitis. As to symptoms they are much the same, but tenesmus is more marked and stools more frequent, and the case is more rapid. The stools are less bright colored than are those of amebic dysentery, they have fewer red, more white, corpuscles—stools like clear red currant jelly are probably amebic. The slough of amebic dysentery are white, those of bacillary dysentery apt to be greenish. Recital bilharziases and ankylostomiases will be included by microscopic examination.

Treatment—Soured milk (Bulgarian bacillus), antiseptic enemata cyllin or copper sulphate. Serum treatment has reduced mortality among the pilgrims at El Tor from 50 per cent. to 12 per cent. Toce polyvalent anti-dysenteric serum or more may be given hypodermically or intravenously, but in case of doubt we should treat the case for both infections.

Prevention is, of course, our aim, and this we seek to achieve by securing clean water and clean food. The great difficulty is the carrier. There have been far fewer new cases in Indian jails since the convelescents from dysentery have been kept in gangs by themselves.

W. E. HOME, M.D.

THE BRAVE BELGAE

By FLORENCE WITHROW

(Concluded)

EMPEROR JOSEPH II., son of Maria Theresa, took considerable interest in his Belgian states and attempted civil and religious reforms, giving rights to Protestants and curtailing the ecclesiastical powers of the Roman Catholic clergy. He also forced Holland to abandon the fortresses she held on Belgian soil.

As the young Austrian Emperor's measures were too radical for Catholic Belgium an insurrection ensued which resulted in the declaration of a Federal Republic, 1790, with Vandersnoot as virtual dictator.

For several centuries Liege, which was governed by a Prince Bishop, had preserved its principles distinct from the Netherlands and belonged to the Westphalian Circle. The other Provinces were directly subject to Austria, although each state claimed its statute rights of independent recognition by the sovereign through the Charter of the "Joyous Entry." This entry was honored only a few months back by King Albert in visiting Liege where he respected the ancient custom of kingly homage to the city's mayor. The old ceremony of formalities before being allowed to enter, suggests the honored custom of the British sovereign at Temple Bar when officially entering the city and the waiting there to receive the keys from the Lord Mayor of London. Praise to every King who respects his people's rights and usages!

During Austria's control Belgium advanced not one whit in literature or the arts and at the end of the eighteenth century was the most retrograde State in Europe. The long interdict on the Scheldt preventing exportation, hampered manufacture, hence attention was turned to the soil which is richer in human blood than any other on the earth. Naturally it became a garden or a vineyard and even to-day supports the largest population per acre of any country in the world.

Again Belgium was to have a change of masters, for the Reign of Terror during the French Revolution aroused a spirit of revolt in the Netherlands. The Girondins for a time supreme, appointed the intrepid Dumouriez to wage war with Austria by invading Belgium. Once more grim death stalked the Lowlands during the terrible winter of 1794. French cannonading again brought the brave Belgæ into a life and death conflict. We lose count of numbers, so numerous have been their struggles for freedom.

In 1797 the French Convention declared Belgium annexed to France. Austria was forced to acquiesce and Francis II., son of Leopold II., reluctantly gave up Belgium. In compensation, after Bonaparte had subjugated Italy, a slice of Venetia was given to Austria.

The new French Republic tyrannized over blood-bought Belgium, so terribly that a Flemish peasants' insurrection resulted, but this poor little country was too exhausted to free herself from foreign occupation and its consequent horrors. Again we exclaim, was ever a people more chastened!

Only a few years passed before the French Directory became the Consulate. Then by a brilliant coup d'etat, the first Consul, Napoleon became Emperor 1804. His first visit to Belgium was a gorgeous triumph. With military genius he saw the strategic value of Antwerp as a base against England, hence he strengthened the fortifications, built docks and arsenals. He ordered a continental blockade against England, which almost ruined Flemish trade and industries. Napoleon's conscription in Flanders was also most cruel. Further his persecution of the

clergy was obnoxious to devout and faithful Belgium.

Thinking to appease the Lowlanders he made a special visit in 1806 to present his bride, Marie Louise, the granddaughter of their revered Maria Theresa and having included Holland and Belgium in his new Empire, he placed his youngest brother Louis on their throne. On the downfall of Napoleon, 1815, these two countries were forced into the single kingdom of the Netherlands under the House of Orange.

The Napoleonic regime, while a military despotism, led Belgium into a larger life. The code Napoleon prescribed judicial rights and the Concordat with Pope Pius VII. recovered lost privileges to Catholic clergy, and at the same time established religious liberty to all sects for the first time in bigoted Belgium.

With the removal of the blockade, trade expanded enormously and Flemish fabrics and the products of agriculture and horticulture became famous. Beet sugar dates from this epoch.

William I. of Orange had a difficult task to rule justly his composite kingdom for racial feuds and national jealousy still existed. The Dutch having had freedom longer were better educated and held their neighbor in contempt. Moreover, the King being Dutch, Holland's minority, although a million less, controlled affairs. It had also become, at Belgium's expense, the greatest carrying nation. Furthermore Holland's debt and taxes were unequally levied on Belgium. In language and religion also William of Orange was intolerant, decreeing that Dutch be the official tongue and forcing the Catholic clergy to attend his new college in Louvain.

However, in spite of disabilities, a new era of prosperity followed and mining, engineering and glass making were added to Belgian industries. Painting also revived under Louis David who moved his studio from Paris to Brussels

William I.'s obstinacy in government matters aroused active hostility and soon Belgium and Holland were at civil war, 1830. Brussels and Antwerp were the theatres of strife, and again Belgian blood was spilt in the cause of independence. Had it not been for French aid under Marshal Gerard, Dutch troops would surely have won.

A conference of the Great Powers met in London and drafted a Treaty of Separation which unfairly gave to Holland half Limbourg and Luxemburg, a toll on Antwerp's shipping and an annual tax on Brussels commerce.

The Belgians invited the son of Louis Philippe, a Bourbon of the Royal Orleans branch, to be their constitutional hereditary monarch, but French prejudice prevented his acceptance.

The new crown was then offered to Prince Leopold, of Saxe-Cobourg, a German and husband of Princess Charlotte, daughter of George IV., who, had she lived, would have reigned in England instead of Queen Victoria. In 1832 Leopold married the daughter of Louise Philippe, Princess d'Orleans.

King William I. and King Leopold I. both headed their armies and conflict of arms continued for two years. King William was obdurate and refused to relinquish certain powers. At last Lord Palmerston and Mons. de Talleyrand threatened to adopt coercive measures and William was forced to yield. Had he been more conciliatory and given "Home Rule" to Belgium, the House of Nassau-and-Orange would probably still be ruling the whole instead of only one of the divided kingdoms. Reconciliation was slow and was not fully achieved till 1839 when a new Treaty of Peace was signed by the neighbor States. But in 1830 and in 1839 the Powers declared Belgium a neutral country whose territory must no longer be violated and whose government must be recognized.

Belgian vim, although many times vitiated by invasion, now showed unwonted vigor and took on "civilization" as fast as it could be made. The little kingdom quickly adopted the locomotive engine recently invented in England, and was the first country to have a railway under State control. Further she was the first to abolish the octroi or vexatious municipal gate tax. Hence Belgium became the cheapest capital in Europe for food stuffs.

One unjust handicap Belgium still suffered in having to pay to Holland 1,120,000 pounds, navigation dues on the

Scheldt whose wide estuary bisects Dutch Zeeland. Belgium finally consented (1863) to pay Holland 1,440,000 pounds cash and be forever free of this rapacious toll.

Leopold I., the well beloved, who had worked untiringly along every line for his adopted country's interests died in 1865, and was succeeded by his son Leopold II., aged 30, the first king born in Belgium since Charles V. The new monarch tried to reconcile the Catholic and Liberal parties, and in 1880 summoned his people to forget political and religious differences in the 50th anniversary of the nation's independence.

The population had grown from 3,780,000 to 5,520,000. Only 5 per cent. of the land belonged to the church as against 75 per cent. a century before. The increase in textiles, lace, glass, iron, coal and zinc was phenomenal. Antwerp went from 72,000 to 230,000. To-day Belgium is comparatively the most populous country in the world.

Its constitution which evolved from the laws of the old States General, represents to-day the high water mark of liberal tendencies and the government is practically that of a republic with an hereditary Royal President.

Mention must be made of Belgium's work in Africa. In 1876 Leopold II. called a geological congress which resulted in an expedition to Central Africa. The sainted Livingston with others had penetrated to the interior of the dark continent, but to the intrepid William Henry Stanley was assigned the task of exploring the Congo and establishing Belgian authority in far remote parts. The reader knows of the difficulties encountered in constituting the Free States and in maintaining their governance. Leopold II. deserved immense credit in his initial efforts, but his subsequent acts regarding slave trade and rubber extortions were most execrable. The Congo Free States, in which some one has said there is nothing free but fever, have been an enormous expense, but civilization and Christianity have enlightened this benighted land and its potentialities for good are prodigious.

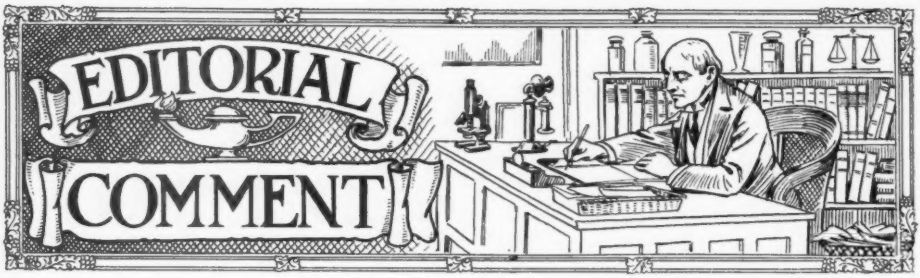
The third sovereign of the independent Kingdom of Belgium is King Albert, the hero of the world's greatest war who chose "the better part" in that he would not break his country's inviolate right, nay duty, to neutrality even for the most glittering seductions of the invader. He is the nephew of Leopold II., and is infinitely more beloved than was the late King during his later years, when his name became execrate for scandal, parsimony and African tyranny. (Died Dec. 17, 1909.)

Young Albert is honored the world over for his noble courage and heroic energy in the forefront of battle. He is called "a King without a country, without a crown." But just for a season—as he exultantly exclaimed, "the enemy holds my country but my soul is free." That soul-spirit of brave Belgium and her hero King has saved Europe—has saved the liberties of man and the rights of nations.

One word of the accomplished Queen and wife. A graduated Doctor of Medicine she has personally tended the wounded, and if need be would follow her hero husband into the battle line.

Blessed is the Immortality of Gallic Belgica.

All the world shudders at the horrors committed on this chastened country during these very days now passing. It is a land of woe and bitter wailing, but it shall yet blossom and bear rich fruit of the earth and of holy manhood. "The Lord God of Hosts shall surely requite." Brave Belgæ, beloved King and Queen, "Resurgam" (I shall rise again) shall be your motto.



Salesmanship and Business Building.

We call your attention specially to a paper in this issue by Mr. Geo. W. Allen of the Consumers Gas Company Toronto. We have published it because we are glad to see business men taking such a keen practical interest in matters of Public Health.

Measles and Mumps.

An explanation is in order. Last month we wrote upon this subject and thereby evoked an answer and incidentally some valuable information from the Department of Health of Toronto, information by the way that had never before been given to the Toronto public. This is the information we have been wanting and we are glad to publish the following which appeared in the Public Health Bulletin:—

Only a Year Late.

In going to press we observe in the current issue of the Public Health Journal, editorial comment on Measles and Mumps, in which the writer takes a thrust at the Toronto Department of Public Health for not (as he says) having provided hospital accommodation for Measles.

Toronto has, through its Local Board of Health, had a Measles Hospital for nearly a year, where there is ample accommodation to meet all requirements of the citizens. There have been no such imaginary cases, such examples of inconvenience, as the writer speaks about for many months.

Of course being a year behind time may not seem much out of the way for the Public Health Journal, but those interested in preventive medicine want something more up-to-date.

This hospital was opened on June 1st, 1914. Thus the writer of the above is three months out in his count. That by the way. The writer of last month's editorial is a practising physician in Toronto and during April and May of 1914 tried to get some patients taken care of. He called up the Department of Health but was informed in both instances that nothing whatever had been done to care for patients suffering from measles and mumps. One of the general hospitals gave information that 30 patients had presented themselves at the clinics during a short period suffering from mumps, and there was no place for them. From June 1st 1914, until the penning of the editorial no information has come to him as a practising physician nor as Editor of the Public Health Journal, that any hospital had been opened. Not only so, but his physician friends had received no information. One physician has since said that about a month ago he received the knowledge of the opening of such a measles hospital from the M.O.H. as they travelled together. He had been reproving that official with delay in preparing such an institution when the reply came "we have had a measles hospital for a long time now." The Department of Health of the city of Toronto is very efficient and the innovations are numerous and speedy. We are ready to admit that we should have bombarded the telephone of that Department week by week. Thus we should not have been nine months behind. But there is a more excellent way. Whenever a Health Department of a city or town introduces something new the practising physicians should be acquainted forthwith. If necessary make it "private and confidential." We are informed that a hospital for patients afflicted with mumps will be established in Toronto at an early date.

PUBLIC WELFARE

CAPUT MAGNUM

The last patient sent by me to the Hospital for the Insane thought he was the creator and sustainer of the universe. But he admitted that the work was too heavy for him. I think the admission saved him. He is recovering.

Among friends, no one is a superior person. The greatest is servant of all, but seldom suspects his own greatness. Often the servant in the house is its salvation. I care not how distinguished you are, the universe is far more interesting than your achievement. The true king always comes meek and lowly, otherwise he never arrives.

The greatest soul was that lowly one who washed the feet of his friends. Self-sacrifice is the only power that wins battles and settles wars. Fighting annihilates the enemy, but love annihilates the enmity. Resistance intensifies the world's hate; meekness establishes brotherhood and peace.

Humility is not a decoration. It is not an overcoat. It is not a veneer. It is a state of heart. Uriah Heap was a heap of hypocrisy. He had an insidious disease—*Caput Magnum*—a common and dangerous affection. To avoid it, we should interest ourselves in the other man's viewpoint, learn what he thinks and why. Do not be elated over your own cleverness. Nearly all my friends in the jails and penitentiaries are exceedingly clever. Those in asylums love to talk about how sane they are and how clever. They put their hats on with a shoe horn. If they were half as important as they think they are we would have to throw them off the world altogether or the earth would skid in its orbit.

Our resources are boundless while we remember their source. When we imagine ourselves superior persons, we become objects of mirth, or of pity, or even of contempt. We are all stupid and conceited and selfish when we imagine we are not. As soon as we begin to suspect it ourselves, there is real evidence of our significance. When we snub others with the stigma of inferiority and wave over them the flag of our own importance, we are just vulgar snobs. The meek shall inherit the earth.

The princely device is ever: *Ich dien.* When we have the spirit of service, we are kingly and are loved without measure and beyond measure. The conquering and crowning virtue is humility. A senseless and soulless vice is this *Caput Magnum,* or swelled head.

—DAMON.

CANADIAN POETS

XIII.

TOM McINNES

"This remarkable collection of verse 'Lonesome Bar and other Poems' is the result, one must gather, of much living in the realm of thought and imagination, as well as experience of many lands and people. . . . . There is mystery, fluency, a charm and witchery of word which only lacks in great poetical conviction. . . . . But the best poem is 'The Damozel of Doom,' an eerie, dreamlike, passionate piece, suggested by the teaching of old Tao, who believed that there are regions where dead souls may be awakened by desires so strong that they are drawn outward again to Earth, where, through finer desires, they again pass into Paradise. . . . . The coming of this desire, which shall ultimately free, or banish the soul to ages of 'utter vanishment' is depicted in 'The Damozel of Doom'—a poem worthy of the genius of Poe."

—Katherine Hale, in Mail and Empire.

THOMAS ROBERT EDWARD McINNES is a son of the late Hon. T. R. McInnes, M.D., Senator, and subsequently Lieutenant-Governor of British Columbia. He was born at Dresden, Ont., Oct. 29th, 1867; was educated at the Public and High Schools, and at University College; and graduated in 1889 from the University of Toronto, with the degree of B.A. In December of the latter year, he married Laura, second daughter of Dr. John Hostetter, Toronto;

and shortly afterwards registered as a student-at-law, and graduated a barrister in 1893.

In 1896-9 Mr. McInnes was Secretary of the Behring Sea Claims Commission; and for the balance of the latter year was a member of the Yukon special police and customs force at Skagway. In 1898-1900, he was private secretary to his father, the Lieutenant-Governor; and in 1901, officiated as secretary of the British Columbia Salmon Fisheries Commission.

The first book of verse of this brilliant poet, "Lonesome Bar and Other Poems," appeared in 1909, from the publishing house of Desbarats & Co., Montreal. His second, "In Amber Lands," mostly a reprint of the first volume, was issued in 1910, by the Broadway Publishing Co., New York. And his third volume (Broadway Publishing Co.), a work of interesting originality, entitled, "The Rhymes of a Rounder," appeared in 1913.

"Lonesome Bar," a poem of 440 lines, is a thrilling description of tragic life in the Klondyke, in the early days of the rush for gold. But we have not space in which to quote from it.

Originality, constructive imagination, felicitous fancy, and delightful humour (if sometimes grim), combined with philosophic subtlety, much experience of life, and skilled artistry, are the outstanding qualities of this poet, so little known to Canadian readers, so worthy of their appreciation.

THE MOONLIT WHEAT

O love of mine! amid the moonlit wheat
  Of harvest-fields how fair—how lily-sweet!
I saw thee stand and signal me alone
To that untrodden vale that was thine own
  On that last night of all that we did meet,—
O love of mine amid the moonlit wheat!

No thing within that region was astir;
  Entranc'd I saw it all as if it were
The scenery of a dream wrought to express
The longing of my heart, thy loveliness,
  And that unseen romance whose theatre
Must be in regions where no thing's astir.

Quaint and low, like some remote bassoon,
  Across the marsh there came a muffled croon,
And all alone one melancholy frog,
Squat on the butt of a sunken cedar log,
  Solemnly did serenade the Moon:—
In tone so low and quaint—like the quaint bassoon.

While in an elm-tree an oriole
  Trill'd out a rural evensong that stole
In drowsy cadence from the upper air:—
O Love of mine! in Eden unaware
  Some angel slept to let our spirits stroll,
While o'er us sang that golden oriole.

And far above the starlit skies unroll'd
  A spell of silence, and of things untold,
That seal'd our lips; the warm ripe wheat, caress'd
By zephyrs scented from the sultry West,
  Went rippling like a sea of pallid gold,
Under those starlit skies, so wide unroll'd.

But when I loos'd thy locks of yellow hair
  To curl and shimmer in the cooling air,
Past coy denial, and virginal disguise,
I read the unutter'd secret in thine eyes
  Of all thou wouldst surrender to me there,—
The while I loos'd thy locks of yellow hair.

And Time went by—and Time was naught to us:—
  Only our wistful hearts grew tremulous
To hear the zephyrs in sweet union sigh,
While slowly in the fulness of the sky
  The lucent Moon herself sank amorous:
And Time went by—and Time was naught to us.

Alas! how now the serpent years unfold
  Sharp treacheries, and pangs unknown of old!

Yet once to have had thee mine—once to have felt
In thy caresses all my being melt
To passion's last felicity,—I hold
Worth every pang these serpent years unfold.

And oft I loose the gates of Memory
To seek amid the uncertain scenery,
O love of mine! some vision of thee, pale
Within the silence of a moonlit vale
Where none may follow, and where none may see,—
Beyond the darkling gates of Memory.

I am thy lover still, O love of mine!
My heart shall never lose the fire of thine;
And tho' I bide in loneliness and pain,
My soul shall hold her peace, and not complain,
Trusting somehow, somewhere, these arms shall twine
Round thy sweet self again, O love of mine!

ILLUMINED

I woke in the Land of Night,
With a dream of Day at my heart;
Its golden outlines vanish'd,
But its charm would not depart;
Like music still remaining,
But its meaning—no man can say
In the Land of Night where they know not
Of Day, nor the things of Day.

I dwelt in the chiefest city
Of all the Land of Night;
Where the fires burn ever brighter
That give the people light;
Where the sky above is darken'd,
And never a star is seen,
And they think it but children's fancy
That ever a star hath been.

But out from that city early
I fled by a doubtful way;
And faltering oft and lonely
I sought my dream of Day;
Till I came at last to a Mountain
That rose exceeding high,
And I thought I saw on its summit
A glint as of dawn from the sky.

'Twas midway on that Mountain
That I found an altar-stone,
Deep-cut with runes forgotten,
And symbols little known;
And scarce could I read the meaning
Of the legends carven there,
But I lay me out on that altar,
Breathing an ancient prayer:

"By the God of the timeless Sky,
O Saint of the Altar, say
What gift hast thou for me?
For I have dream'd of Day:
But I seek nor gift nor power,
I pray for naught but light;
And only for light to lead me
Out of the Land of Night!"

Long I lay on that altar,
Up-gazing fearfully
Thro' the awful cold and darkness
That now encompass'd me;
Till it seem'd as I were lying drown'd
Under a lifeless sea.

There shone as a pale blue Star,
Intangible—serene—
And I saw a spark from it fall
As it were a crystal keen;
And it flash'd as it fell and pierc'd
My temples white and cold;
Then round that altar-stone once more
The awful darkness roll'd.

But there was a light on my brow,
And a calm that steel'd me through,
And I was strong with a strength
That never before I knew;
With a strength for the trackless heights,
And scorn of the World below—
But I rose not up from that altar-stone,
I would not leave it so.

"O Saint of the Altar, say
How may this light redeem?
For tho' on my brow like a jewel
Its Star hath left a gleam,
O Saint, 'tis a light too cold and cruel
To be the light of my dream!"

Anon 'twas a crimson Star
That over the Altar shone,
And there sank as a rose of flame
To my heart ere the Star was gone;
And out from the flames thereof
A subtle fragrance then
Went stealing down the mountain-side
O'er the lowly ways of men.

The Star was gone, but it brought
  To light in its crimson glow
The lovely things forgotten
  I dream'd of long ago;
And gladly then I had given
  My life to all below;
Yet I rose not up from that altar-stone,
  I would not leave it so.

And at last was a golden Star;
  But I scarce know how nor where;
For it melted all around me,
  And the other Stars were there;
And all in one blissful moment
  The light of Day had come;
Then I reel'd away from that altar-stone,
  Old, and blind, and dumb.

I dwell again in the city,
  I seek no more for light;
But I go on a mission of silence
  To those who would leave the Night;
And for this—and this thing only,
  Thro' the evil streets I stray;
I who am free to the timeless Sky
  Illumin'd forever with Day.

THE DAMOZEL OF DOOM
Part II.

That dream came not again to me,
  Nor any dream at all;
But well I knew, as the days went past,
  There held me fast in thrall
A something of that shrouded thing
  That wrapped me like a pall.

An aura drear that sever'd me
  From men and the ways of men;
As some great evil I had done
  My friends did shun me then;
I felt accurst, and kept apart,
  And sought them not again.

But O how chill the World did grow!
  And the Sun, as a thing unreal,
Did glare and glare thro' the vacant day,
  And never a ray I'd feel
To warm my blood, the light fell thin
  And gray as spectral steel.

A pale disease took hold on me,
  And when the night would come
I had no rest, but sleepless lay
  As stark as clay, and numb;
And could not stir till dawn would break
  Nor gasp, for I was dumb.

And yet were times all faintly tinged
  With a glimmering ecstasy;
Moments that linger'd in their flight,
  Trailing a light to me
Elusive and wan as the phosphor foam
  That floats on the midnight sea.

And out of my stricken body then
  My soul would seem to creep,
And over a sheer unfathom'd brink
  Of silence sink asleep,
Beyond the shadow and sound of dreams,
  And deeper than Earth is deep.

Yet ever from those slumber spells,
  That seem'd like years, I'd start
Sudden awake, bewilder'd by
  A presence nigh my heart,
As if a soul had stirr'd in me
  That of me was no part.

And so three seasons pass'd away,
  And the early Summer came;
And still that weird fantasy
  Enshrouded me the same;
But now it seem'd as luminous
  With some alchemic flame.

At length in a garden wide and old,
  A garden all my own,
One afternoon I lay at ease
  Under the trees alone,
While the fragrant day fell off in the
    West
  Like a Titan rose o'erblown.

And lying there I dream'd once more,
  And it seemed that a scarlet bird
Flew out of my heart with a joyous cry,
  To the topmost sky, and I heard
Her song come echoing down to me,
  Yearning word on word:

"Slow—slow!
O moments—O ages slow!
But love shall be my own again—
  Be it moments or ages slow!"

GOD'S KALEIDOSCOPE

Much too much of this I have heard:
The World is growing forever old,
Its flowers perish in the mould,
And all things pass as a tale that is told:
Life is a glimmer, fading fast
Into the charnel of the Past,

And Death is ever the final word.
O much too much of this I have heard!
Of course we know that all things flow,
But yet, as some other Greek explains,
The all is fasten'd with great chains,
And neither you nor I can dream
How this or that can slip from the Scheme:
Why ask of the dusk what it does with
the dawn,
Or ask where the end of the circle has
gone,
Or where into what the wind blows?
Yet this one questions of last year's snows
This other, because of a wither'd rose,
Argues for me a blank to-morrow,
And, in the very light of dawn,
He bids me of his wine-cup borrow
What he resents—oblivion!
O great Omar! I bow to you,
And nod familiar to Villon,
But I have neither hope nor fear
O' being disperst in the atmosphere:
Oblivion—I wish there were
Such easy exit on the air,
Beyond desire, beyond regret,
And clearly out of anywhere:
To be, so far as we're concern'd,
An issue without sequence—nay
Too much of Nature's game we've learn'd
To credit that, I think, Omar!
Your rose has wither'd—well, that's
clear;
But of itself 'twas a passing phase,
And may again on a day of the days
From the undistinguish'd mass appear,
As much itself as is itself
Now in the light of your partial eye:
And as for the snows of yester-year,
Why, every flake of them still is here:
No one of all has 'scaped from charge
In sea or sky or whirling storm:
So looking at it by and large
It seems entirely a matter of form:
There is no pit of nothingness
Wherein what is can e'er be less,
And we may say of everything
It is itself continuing:
The very shadows that we see
Are fast involved; 'tis a safe guess
No thing has been, no thing can be,
That is not now essentially:
And evermore we yet may hope
Within our little nets to rope
Some of that endless element
Of mystery and beauty blent
With the turning of God's kaleidoscope.

THE WAY OF BEAUTY

Who brings a thought of self to beauty's
shrine,
Or jealous envy, by so much the less
Shall feel within his soul her deep im-
press—
Shall thrill at quaffing of her mystic wine.
For Beauty hath no care for thine or mine
But wasteth wide in wanton loveliness;
And only thus, in self-forgetfulness,
Shall any share with her the life divine.

O happy he whose heart doth full respond
To wandering Beauty's spell—wherever
wrought!
He hath a pleasure finer than all
thought
That instant as the touch of fairy wand
Makes rich the world for him, whate'er
his lot,—
E'en tho' perchance a homeless vagabond.

NATIONAL CONFERENCE OF CHARITIES AND CORRECTION

Baltimore invites you to attend the Forty-second Annual Gathering of Civic and Social Workers, May 12-19, 1915. The nations' most pressing social questions will be there discussed by the foremost experts. "See America" and learn about social progress in America and what it means for your community. On the way to Baltimore you can visit settlements, playgrounds, social centers, clinics and other successful welfare activities in various cities.

CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS

FIFTEENTH ANNUAL CONVENTION MEETS IN VANCOUVER
JULY 5th and 6th, 1915

SEVENTH PAN-AMERICAN CONGRESS

The Seventh Pan-American Congress will meet in San Francisco, June 17th-21st inclusive. It assembles pursuant to invitation of the President of the United States, issued in accordance with an Act of Congress, approved March 3, 1915.

The countries and colonies embraced in the Congress are the Argentine Republic, Bolivia, Brazil, Canada, Colombia, Cuba, Chile, Costa Rica, El Salvador, Ecuador, Guatamala, Honduras, Haiti, Hawaii, Mexico, Martinique, Nicaragua, Panama, Paraguay, Peru, Santo Domingo, United States, Uruguay, Venezuela, British Guiana, Dutch Guiana, French Guiana, Jamaica, Barbadoes, St. Thomas and St. Vincent. The organization of the Congress is perfected in these countries and the majority of them have signified their intention to be represented by duly accredited delegates.

ANNUAL MEETING OF ONTARIO MEDICAL ASSOCIATION AND THE MEDICAL OFFICERS OF HEALTH

COMBINED ANNUAL MEETING OF THE ONTARIO MEDICAL ASSOCIATION AND THE MEDICAL OFFICERS OF HEALTH OF THE PROVINCE OF ONTARIO, WILL BE HELD IN PETERBOROUGH, ONT., ON TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY, MAY 25th, 26th, 27th and 28th, 1915.

Academy of Medicine, Toronto

Section of State Medicine

ON February 25th, the Section of State medicine was fortunate in having two interesting papers on Economics and Sociology from gentlemen outside the medical profession. These subjects are linked up with the work of the medical practitioner and it is a healthy sign that the relationships of different departments of human experience are becoming better known. The titles of the papers are here given. They will be published in this Section in the May issue.

I.—The Economic Aspects of Health, Prof. G. I. H. Lloyd, Dept. of Economics, University of Toronto.

II.—The Relation of Sociology and Social Service to Public Health, Dr. Franklin Johnson Jr., Director Dept. of Social Service, University of Toronto.

RELATION OF PSYCHIATRY TO PUBLIC HEALTH

By JOHN W. S. McCULLOUGH, M.D., D.P.H.

A MAN confined in an insane asylum is a distinct economic loss not only to his own family but also to the state, in two ways; his family and the state lose the benefit of his labor or life work, and one or both are put to the expense of his future care until his cure or death. If he is incurable it were better for all concerned that he were dead. The majority of patients committed to hospitals for the insane are incurable, consequently the majority are henceforth a burden upon their families or the state, or both. It is useless at this time to burden you with an estimate, in figures, of this economic loss. If one thinks for a moment of the number of hospitals for the insane in this province, of their capacity and the plethora of patients in comparison to our small populations it is perfectly obvious that the loss is enormous and merits the attention of those who have an interest in public health work with the object of preventing disease and its attendant evils.

The number of beds in institutions for the insane in the United States is greater than the number of beds in all the general hospitals combined, that is there are more people with mental disease receiving public care than from all other diseases combined.

Custody—In the earlier stages of the treatment of the insane the question was simply one of the custody of these unfortunates, they were shut up and kept confined, they were often harshly treated, and in fact their whole treatment was worse than useless as far as any cure was concerned.

Treatment in Hospitals.—This was succeeded by the present humane and considerate plan now followed in hospitals for the insane where proper care and treatment effects a cure in the minority of cases.

Prevention of Insanity.—It is only in recent years that thought has been directed along the line of prevention of insanity. Consideration of this phase of the

question reveals the fact that a great deal may be accomplished by preventive measures. The prevention of insanity like the prevention of typhoid and other communicable diseases, in which so much is done now-a-days, is recognized to be a great public health question. The number of insane under treatment seems to be increasing out of proportion to the general population, consequently it seems advisable that the prevention of mental diseases should be considered in the general advance which is being made against communicable diseases, for it is very closely related to all other fields of preventive medicine.

Infections—Amongst the various causes of insanity the infections play a considerable part. Of these the most important is syphilis, causing from 10 to 15 per cent. of all cases and being the direct cause in about one-fifth of all first admissions of men. It usually assumes the form of general paresis which is commonly fatal in from 3 to 5 years. Besides this it lays the foundation for gummatous affections of the brain, meningitis and arteriosclerosis which pave the way for mental deterioration. Further it is only possible to imagine the widespread train of evil of which a single syphilitic may be the origin. General paresis in this province causes at least one-half as many deaths as typhoid fever, and many more than smallpox, but its cause is lightly regarded because it is not understood by the community amongst whom an epidemic of smallpox or typhoid fever would cause consternation and while the earnest efforts of public health officers are directed against these other infections nothing at all is done for the prevention of the greater evil.

Alcohol.—Alcohol is an immediate or predisposing cause of one-third of all cases of insanity, but while its ill effects are apparent its definite character as an etiological factor is obscured by the knowledge that intemperance is associated with a mentality more or less below par. Salmon says that "the idea is spreading among psychiatrists that, in a world of drunkenness the alcoholic is an abnormal type."

Heredity.—Probably the most important factor in the production of insanity is heredity which is said by competent observers, both in Europe and America, to account for at least 50 per cent. of the patients in hospitals for the insane.

In preventive medicine it is a sound principle to anticipate the incidence of an epidemic and thus prevent it. In the prevention of insanity the causes must be known and proper measures taken to prevent the operation of such causes.

How shall we check insanity? We know something of the causes, we are aware of the malign influence of syphilis and other infections; we know the evils of alcoholism and various drugs, alone, or associated with mental deficiency. The bane of hereditary tendency to insanity has long been known. In this country because of a loose system of medical inspection of immigrants we are rapidly increasing our load of defectives. Finally, the various factors inducing stress of living, such as overwork and want of employment, the congestion and poverty of cities, child labor, etc., all contribute more or less to the production of mental disease.

The prevention of insanity is a medical problem and we as medical men must look for the solution. How are we to set about it?

(1) The medical profession must learn more about mental diseases. The student, beset with a curriculum which he cannot master in a 5 years' course, learns very little about insanity, and while there is some improvement in this respect in the last twenty years it will be conceded that the average graduate in medicine is but ill-informed in respect to this affection. We have in this province a number of large and well-equipped institutions situated in accessible centres and controlled by competent members of our profession. Here may be found large numbers of cases presenting almost all phases of insanity. What is more logical than that each hospital for the insane should become a post-graduate centre from which preventive measures should emerge. Salmon points out that in each hospital there should be a dispensary to which incipient cases—so-called "borderland" cases or the subjects of former attacks, or relatives of such persons—may come for advice. Here is a rich opportunity for the

practical application of preventive measures and the dissemination of most valuable information. The staff might give talks in churches, schools and clubs on the preventable causes of mental disease and the advantage of early treatment. People should have it explained that insanity is a disease and not a crime. These talks should be supplemented by the use of slides and moving pictures and the public should be instructed as to the humane and careful treatment given patients in these institutions so that the opprobrium with which an insane asylum is regarded may be removed. The very name of asylum, now abolished in this province for that of hospital, is a step in the right direction, and the publication by the combined staffs of a bulletin which is largely circulated is also of great value. Opportunity should be given on easy terms for medical practitioners to obtain post-graduate instruction in our hospitals for the insane. Under present conditions the state is hoarding up a vast storehouse of clinical material and the medical profession is denied its advantages to the great loss of both the state and profession. An advance step might be taken in establishing at each hospital medical meetings to which members of the profession within reach should be urged to attend. Various types of the disease might be shown and clinical talks given by members of the staff. Every hospital should have a competent pathologist and bacteriologist employing all his time in research work. Groups of physicians should be invited to autopsies from time to time; and when patients are about to be discharged consultations with the physicians near the patient's home should be had at which suggestions for after-cure may be given. All this would mean larger staffs and greater expense, but the results attained would pay in the end. While the policy of the government in such matters is not disclosed it is quite probable that any scheme looking to the improvement in prevention of mental disease would meet with the earnest consideration of the Provincial Secretary, who is alive to the value of work of this kind. The Provincial Board of Health would be glad to further in so far as possible measures of Public Health work of this or any kind.

Amongst the general public, personal talks, the distribution of leaflets and literature upon this subject will be of value. The Provincial Board of Health is doing some little work in this direction by means of lectures, the moving picture films and the dissemination of literature.

Not only should the insane themselves receive the best care available, but under the plan referred to each case should be traced back, his history investigated, and if the cause of insanity is a preventable one, such as for example syphilis, the members of his family should be examined in order that, if necessary, suitable treatment may be adopted in order that they should escape the consequences of such cause.

National and provincial societies for Mental Hygiene have been established in some countries—New York, Connecticut, Illinois, Massachusetts and Michigan have such societies which are doing good work in the prevention of insanity, as well as in giving publicity to advanced views upon this question. Societies of this kind would be of real value in this country, especially if they would co-operate with our local institutions.

Every defective child is a possible patient in a hospital for the insane or in an institution for imbeciles. Early treatment may obviate at least a portion of this. The present day medical inspection of schools will afford a means whereby these children may receive special and suitable education to their own advantage and to that of the normal children in the school whose advance will not be hindered by the drag of sub-normal ones. The permanent segregation of defectives, thus preventing offspring, must sooner or later be required.

Since we know with certainty that there are at least some causes of insanity which are entirely preventable it is imperative that preventive measures should be established. For the adequate treatment of mental diseases, both curative and preventive, much greater amounts of money must be spent by the government. It is estimated that one-fifth of the country's income would be required for a high standard of the care of the insane. Is it not worth while?

THE RECEPTION HOSPITAL

HOSPITAL FOR ACUTELY INSANE

By J. M. FORSTER, M.D.

Medical Superintendent, Hospital for Insane, Toronto

BEFORE 1841 the County Jails afforded the only asylum for the destitute insane in Canada. In 1839, however, an Act was passed authorizing the establishment of an asylum, and in 1841, on the representations of Dr. Rees, the old jail on Toronto street was appropriated as the first Provincial Asylum, and was placed under the charge of the gentleman who was instrumental in its establishment. At that time seventeen (17) patients were entered. The number continued to grow so rapidly, however, that it was soon found necessary to occupy temporarily an old building in Queen's Park and a large house, the property of Hon. J. H. Dunn, on the corner of Bathurst and Front streets.

The corner stone of the present asylum was laid on August 22, 1846. The plans for this institution were made out by the late John G. Howard, architect. This building was opened in January, 1850, and it stands to-day a splendid tribute to the benevolence and high ideals which then occupied the minds of the authorities in charge of the work.

Dr. Scott was the first Superintendent of the new Asylum, and continued in office until the 1st of July, 1853, when he was succeeded by Dr. Joseph Workman, who held this position for twenty-two years. It was not my privilege to be personally acquainted with Dr. Workman, but as a student I have seen him in the meetings of the medical men. To my knowledge he was held in the highest esteem by both physicians and students. He certainly improved the treatment of the patients. Many of our highest ideals live to-day in those who were associated with the late Dr. Joseph Workman. He, in turn, was succeeded by Dr. Daniel Clark in January, 1876, who remained in charge of Asylum affairs until 1905, when Dr. C. K. Clarke was appointed as his successor, having come from Rockwood Hospital, Kingston. Dr. Clarke frequently said both privately and publicly that his association with Dr. Workman was an inspiration to him in his practice of psychiatry, a compliment indeed, and one which I may be pardoned for extending to-night to Dr. Clarke himself. He taught one to look upon the mental case purely and simply as any problem in medical science and to carefully observe the symptoms, treatment and pathology of the various cases coming under his care. He extended greatly the liberties of the patients and advanced the treatment by the introduction of the training school for nurses in Rockwood, where the first class was graduated in 1890, and to this event, modestly staged, I attribute the beginning of the hospital treatment of patients in the Provincial institutions.

There were dark days to be lived down in this work, when traditions held sway in an atmosphere pervaded with fear, during which time the patient was craving only to be understood.

Permit me to quote from an address given by Dr. W. A. White, on "The New Ideal" at the laying of the corner stone of the John Hubner Psychiatric Building of the Springfield State Hospital.

"The literal application of the doctrine of diabolical possession may have gone out and at least in many places did go out of existence, but there remained a certain attitude towards those of diseased mind, which was not very different from that born of this horrid superstition. The mentally diseased were considered, just as though they had been under the influence of the superstitution, to be beings apart from others; "craziness" was a condition which was not capable of being understood, and which had the peculiar effect of isolating and ostracizing those who suffered from it. Along with this attitude,

born of ignorance, there naturally went the twin brother of ignorance, fear. For wherever there is lack of understanding, wherever phenomena are enveloped in mystery, wherever the source of events is unknown, there we always find fear. Ignorance and fear then have been the great obstacles that have had to be overcome in dealing with the problem of the care and treatment of the mentally diseased."

And what are the obstacles? To-night I find in the heading of my remarks, "The Treatment of the Acutely Insane." Is not the word insane itself shrouded in mystery, and is it not significant of a social and legal, rather than a medical condition? There are so many standards involved in this term in the minds of the various medical men, as well as the public.

A short time ago, I was interested in reading in one of the journals ten definitions of insanity, varying from the case with straw in his hair to the man that won't work. I am practically exposed to new definitions of insanity every day in meeting the public.

Although we had opened the doors in Queen Street Hospital to any patient who was conscious of his mental illness and came to the hospital desiring treatment this process of voluntary admission was provided for, in the Statutes two years ago. At this time the offending terms, "lunatic and asylum," were also stricken from the Statute Books. This was a practical method of helping our patients to be understood, many of whom are sensitive to the certification of insanity, which in itself acts as a trauma. Surely all such cases should be protected against shock of any kind, whether physical or mental. At this time there were many cases placed in the jails for certification, awaiting admission to the hospital. Many others did not reach the hospital, because of the popular prejudice against what they termed the old asylum. It was out of consideration of these circumstances that in July last there was opened in the pavilion of the old General Hospital a reception ward for mental cases of all kinds, and an Act was passed in the Legislative Assembly making it of the easiest possible access, so that no one should be placed in the jail for mental observation, and no one desirous of having treatment need go without it. If a physician has a case that he would like placed in this hospital for observation and treatment, he may do so as in any other hospital. The wards of this Reception Hospital provide accommodation only for a limited number, and many cases can be better treated in the main hospital to which they may be transferred at once. It is not intended that this reception ward would interfere with the broad lines of treatment carried on in the larger hospital, but there are a great many cases that can be relieved of their illness in a short time and without going farther.

Dr. Clare, the Medical Director, is carrying on the work as best he can under the structural difficulties of the old building, with very good results.

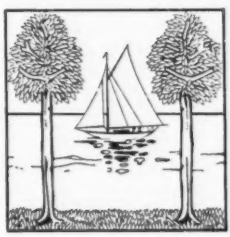
When the new hospital at Whitby will have been completed so that we can occupy it, many of the features discharged by the present institution will have passed. It is planned that these will be carried out in the Reception Hospital. In the probational discharge of patients they are required to report to the hospital either personally or by friends as to the progress they are making. This will be carried out in the Reception Hospital, and a very important function this is.

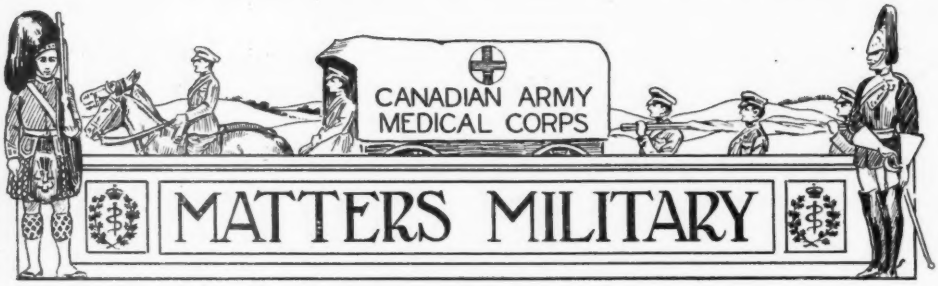
I should like to see this branch of the work recognized in the Social Service Branch of the Public Health of the city, so that one or two graduates from our hospital training school would be on this service. They would be specially qualified to instruct in the home care and to report on the progress of the patients on probation. Another feature that will disappear is the interesting class of students that visit the hospital for clinical instruction in psychiatry. Whitby is too far removed, and the Reception Hospital will discharge this important function. A proper understanding of the mental cases and the lines of treatment cannot well be obtained without residence in one of the hospitals, and it is to be hoped that in the new hospital in Whitby, accommodation will be provided for a certain number of students, who will be encouraged to come to the hospital as clinical clerks for a period of one month or so.

Speaking from my experience, the mental case is not so different from any other case, when he is properly understood, his motives and thoughts carefully analyzed, and his ambitions fostered and encouraged. The farther we advance along the hospital lines, the more hopeful will become the prospect.

It is a serious trust to feel that one controls the liberty of a thousand or so patients. Some have gone out, not promising too well, but have yielded surprising results under their new environments.

It is not, in my humble opinion, just to the patient to weigh too seriously the technical question of sanity or insanity, but to view the case in a medical light, and where there is sufficient and good medical reason for it, the patient should under proper conditions be given the benefit of that chance. Certain it is that when practised, mistakes and failures will be met with, but I am satisfied that we will be rewarded tenfold by the restoration to health of many of those affected.





MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE

From a Special Correspondent in Northern France for the British Medical Journal

FIELD AMBULANCE WORK.

THE theological disputants of a past generation, who were no mean judges in the matter, used to talk much of "internal evidence," and to attach great weight to it when producible. Consequently it is worth noting that the ease with which conventional field ambulance work has been adapted to the conditions prevailing during the last few months in Flanders affords something in the nature of internal evidence of the soundness of the general principles underlying the medical arrangements of the Expeditionary Force. In treatises on war operations in general, and on the work of field ambulances in particular, nothing is said which suggests that the authors ever anticipated a position precisely corresponding to that of the opposing forces at the present time. From the point of view of field ambulance work the matters of principal importance at present are that: (1) the work of collecting and moving the wounded cannot usually be commenced until nightfall and must be completed by daybreak; (2) owing to the great range of weapons that are being used, dressing stations must be kept further back from the fighting line than has hitherto been the practice; (3) the inconvenience which would arise from the fact that bearer sections of field ambulances have to do their work at a great distance from the tent sections are partly eliminated by the utilization now of automobile vehicles for transport purposes. As everyone knows, the British line extends over a line which formerly would have been considered immense, and there are so many differences in the environment of the various divisions that there can be no absolute uniformity in the practice of the field ambulances serving them. The officers in command of the latter are meeting the conditions in which they have to do their work in a variety of ways. On a later occasion it may be interesting perhaps to deal with the matter in detail, but at the present moment the only point on which it is desirable to dwell is the fact that there is nothing in the field ambulance work now going on which represents any real departure from the general principals on which British field ambulances have done their work for many years past. Consequently it is by no means desirable that those who are engaged in training field ambulance units at home should alter their systems of instruction. In reality, the factor which chiefly helps to modify the apparent character of field ambulance work at the present time is the practically stationary position of the divisions to which the various field ambulances are attached. But this is in all probability merely a passing feature; sooner or later trench fighting must come to an end, and other a hole in the forehead, was a track leading right through the brain to a distinct bruise on the inner plate of the occipital bone. It was concluded that the bullet, after penetrating the frontal bone and the brain, had struck the occipital bone

tactics will take its place. In that case field ambulance work will de done once more on lines familiar to those who have studied it at manoeuvres in peace times and in annual training camps, with the exception that the tent sub-division will, as a rule, be housed in farms and the like. Meantime, the chief effect of the stationariness of the divisions to which the field ambulances are attached is that those in command of the latter are able, if they please, to run their tent sections much on the lines of a clearing hospital, and they usually have a good idea where their bearer sections will be required at nightfall. In view of the latter circumstance, and of the desirability of not a moment being lost when the time for action arrives, it appears to be common for commanding officers of field ambulances to separate their bearer sections from their tent sub-divisions, and to station the former permanently as close to the fighting line as they can get. If a building of some sort is available in the desired position, this is utilized; if not, the men dig themselves in much as the troops do in the firing line, and remain under cover until night falls and they can join hands with the regimental bearer parties in getting the wounded out of the trenches and back to the place where the tent sections are established. At some parts of the line, I hear, field ambulance bearer parties and regimental bearer parties share the same quarters, and if ordinary clearing hospitals are close by, the commanding officers of field ambulances sometimes pack their tent subdivision equipment and devote their whole energies to bearer and transport work.

The Vagaries of Rifle Bullets.

Among a number of incidents recently related to me by a first-rate observer were two or three which well illustrate some of the vagaries of which modern rifle bullets are capable. I understood from him that in each case the facts were noted on post-mortem examinations of the bodies of individuals, who had either been killed instantaneously or had died so rapidly that the observed condition must have been primary; or, in other words, could not have been the result of anything that occurred between the moment that the wound was inflicted and that at which death had occurred.

In one case the bullet had entered just in front of the ear, and having passed through the body of the sphenoid, made its exit at a corresponding point on the opposite side of the face. Its track was perfectly straight, but though the wound was merely one of the face, it nevertheless proved instantly fatal. The reason was obvious on opening the skull and raising the brain. The under surface of the frontal lobes had been reduced to a structureless jelly. The case illustrates what has been said by more than one authority as to the bruising and devitalizing action a bullet may exercise on the tissues if at the moment of impact it is travelling almost at its initial speed. It might perhaps be expected that the greater the speed of the bullet the more knife-like would be its action on the tissues, but almost the converse would appear to be the case. The extent of the momentum possessed by a bullet which has not travelled more than 200 or 300 yards leads to the production of waves of force emanating from it in all directions the instant it meets with the slightest resistance; this seems all the more liable to occur if the initial impact of the bullet has not been at right angles to the general surface. In the present case the subsidiary lines of force seem to have been so powerful that even the fact that a bony diaphragm lay between the track of the bullet and the brain did not suffice to protect it. What are probably precisely analogous waves can be produced experimentally in many different ways. If a finger be passed through a basin of water the surface of the latter will be undisturbed if the movement be slow; if quick, a proportionate ripple will result.

The second case was one in which the bullet had probably travelled a considerable distance—say 1,500 to 2,000 yards—before it reached its mark, and its residual momentum was small. The wound was in the forehead and the bullet was found just inside it. Behind the bullet, however, and in a line with

and rebounded back along its original track. In this case there was no general bruising of the tissues surrounding the track, and it was considered that the momentum of the bullet on impact had fallen so low that when the frontal bone and brain had been traversed the elasticity of the occipital bone sufficed to drive it back. Cases in which the opposing forces are so nicely balanced must be rare. Clinically, the different effect of fast travelling and slow travelling bullets is suggested by the fact that cases in which a bullet has penetrated, but not perhaps perforated the skull, are among the most hopeful of their class. It may be that in the case of the brain quite small differences in the momentum make very great differences in the extent of the injury inflicted. I have in mind cases in which the perforated portions of the brain have been seemingly identical, but the clinical phenomena materially different.

In the third case death was due to a penetrating wound of the chest. The opening was rather larger than is usual with those caused by shrapnel or rifle bullets. On post-mortem examination no foreign body of any kind could at first be discovered, but at length a rifle bullet was found embedded sideways in the body of a vertebra, that is to say, the long axis of the bullet was parallel to the long axis of the spinal column. The case was believed to be an illustration of the fact that rifle bullets sometimes turn over in their flight, for the character of the external wound and the position of the bullet in the vertebra were held to prove that it had struck and entered the chest when midway in a revolution round its short axis.

Another statement sometimes made about rifle bullets is to the effect that owing to the extreme rapidity of their flight, they grow very hot through friction with the air. I do not know that any direct proof of this assumption has ever been forthcoming, though it is often adduced in explanation of the fact that so many rifle wounds are sterile. Consequently, the following incident, related to me by a different observer, is of some interest: When undressing a patient a bullet was found lying inside his clothes at the level of the top of his trousers. This bullet was not the cause of the injury for which the man had been sent to the hospital; it had, in fact, apparently hit him only with just sufficient force to penetrate his clothing. This in itself was a little curious, but what seemed really noteworthy was the fact that on the man's skin, just where the bullet was found, there were two distinct burns such as might be caused by twice pressing against the skin a piece of hot metal the shape and size of a bullet. Probably it was a spent bullet, which, after passing through the clothing, had had its progress arrested by some hard object and had then dropped to his waist, where it was held against the skin by his belt.

The Use of Carbolic Acid.

Some five or six weeks before Christmas, when discussion of wound treatment was at its height, the use of carbolic acid was very strongly advocated at the Medical Society of London and elsewhere. By that time it had become recognized that as a rule infection of the wounds seen in this war was simultaneous with their infliction, but it was argued that the natural consequences thereof would be avoided if surgeons at the front took advantage of the powers of carbolic acid. On their arrival at the clearing hospital the patients, it was said, should have their wounds thoroughly painted with liquified carbolic acid; such cauterizing effect on the tissues as it might have was no real disadvantage, while all germs would be destroyed with certainty, and the cases might thereafter be expected to pursue an aseptic course, or at all events would present no evidence of serious local or general infection. There were many who saw weak points in the arguments used, but the view itself was upheld with much ability, and evidence as to the value of pure carbolic acid in the initial treatment of compound fractures such as are seen in civil life was forthcoming from many quarters. Consequently the medical authorities in France determined to have carbolic acid tried upon lines calculated to test thoroughly the statement made in respect

of it. For this purpose one of the consulting surgeons was asked to select fifty cases on their arrival at the clearing hospitals, and to cause their wounds to be submitted, under his own supervision, to a careful process of disinfection in the fashion prescribed by the advocates of carbolic acid treatment. The cases so selected and disinfected were to be specially labelled before they were placed on an ambulance train, and on their removal therefrom they were, if possible all to be sent to one particular hospital. Effect was given to this scheme, but the results of the trial were not favorable to the views of those who maintain that sepsis in general and gas gangrene in particular can be prevented by the use of pure carbolic acid. Of the 50 cases, 39 were admitted to the hospital whose officers were taking part in the test proceedings, and a special note was made as to their condition on admission and as to their after-progress. In no instance does the clinical picture presented by these cases seem to have differed materially from that of the ordinary run of cases, and in each of them, the observations conducted by Sir Almroth Wright and his assistants showed, I understand, that the bacillus aerogenes capsulatus could be grown from the secretions with ease. It should be noted that these cases were not of exceptional gravity; their wounds were representative lesions—some slight, some severe—and among them were a considerable proportion due to rifle bullets. Consequently the results of this trial are not in favor of the belief that great improvement would follow the general adoption of carbolic acid treatment at the clearing hospitals. It is, no doubt, a powerful bactericide, but it can only affect organisms with which it comes into direct contact. It may be easy to bring about such contact when the infection is superficial—that is to say when the micro-organisms are merely smeared on the surface, as in the case of a fracture of the thigh rendered compound by the extrusion of a fragment—but quite otherwise when the infecting organisms are introduced into the wound at the moment of its causation, and driven deep into the surrounding tissues. When so placed they are, it is contended, safe from the attack of any bactericide other than that carried by the blood stream itself. It is also, of course, to be remembered that the cavity of these wounds is very irregular, and that even when they have been opened up with much freedom it may be impossible to make certain that a carbolic swab has been brought into effective contact with every portion of their surface.

The results of these trials have no direct bearing on the question of the utility of carbolic acid used in moderately strong solution in the ordinary dressing of suppurating wounds. In many of the hospitals in France solutions of carbolic (1 in 10 or 1 in 20) are habitually used for syringing out wounds, and are esteemed to be helpful in establishing and maintaining a healthy condition of the tissues. There are those, however, who are opposed to using carbolic acid in any form; they maintain that when it is used pure, its cauterizing effect is merely an addition to the injury already sustained by the tissues, and delays the moment when the natural resistance of these to microbic invasion will become effective. They hold, too, that much the same consideration applies to the use of solutions of carbolic acid in the course of ordinary dressings, where the real aim is to wash the cavity free from all accumulations of pus, whence toxins might be absorbed into the system, and such evacuation is just as easily effected by plain water as by a carbolic solution. No bactericide can affect bacteria which have already got below the surface of granulation tissue, and the vitality of such tissue is probably lowered by carbolic acid, even in weak solution. The logical course, they argue, if carbolic acid is to be used at all, is first to wash out the wound thoroughly by prolonged irrigation with some indifferent fluid, such as warm saline, and then to throw in a small quantity of carbolic acid solution of just sufficient strength to inhibit the growth of bacteria in any fluid whose evacuation it has been impossible to secure.

The Sanitary Inspectors' Association of Western Canada

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FACTS IN REFERENCE TO THE CITY MILK SUPPLY

By A. RIGBY, Assoc. Royal San. Inst.,

Dairy Inspector, Winnipeg, Man.

Read before the Winnipeg members.

I HAVE observed that previous speakers invariably claimed that their particular branch of Sanitary Science was the most important, so that you will pardon me if I say that the City milk supply is of the utmost importance, since no other food is so generally used, forming as it does a portion of some meal of nearly every person every day.

In addition milk is generally used in the raw state, and the weakest of our population, infants and invalids, are dependent not only for health, but even life itself upon a wholesome supply of milk. It is therefore necessary that the supply in its origin, handling, and care by the consumer, be governed by rigid regulation, intelligent attention and advice.

The two most important items of a milk supply, are purity and high food value. Pure milk means not only an unadulterated milk, but a milk free from undesirable organisms and disease germs.

This is most important, since milk is not only a perfect food, but a perfect medium for the growth of disease germs.

Milk is one of the most efficient spreaders of disease, and if it is impure its food value is immaterial. On the other hand, if milk was absolutely pure, but had no food value, it would be of no more benefit than pure water. Thus we see that purity and food value are essential to each other.

The milk supply should be fairly uniform; if there is a surplus at one time and a scarcity at another, the surplus milk is liable to be left over for the next day, when it will have acquired a considerable increase of bacteria, and, on the other hand, if the milk supply is short, there is considerable temptation to augment the supply by the addition of water.

The price should be sufficiently low that a food so adaptable in its utility and so generally used, may be within the reach of all, otherwise it matters little to the poorer classes how pure or how rich a milk may be, if beyond their means.

At the same time if a fair remuneration is not accorded the producer, he either has to give up the business or resort to adulteration.

It is therefore important that Health officials, while protecting the Public Health, should be careful about imposing onerous conditions on the producer, but should rather study with a view to showing the producer how this improvement may be economically made and the advantage to be derived therefrom; on the other hand the consumer who is in a position to pay for milk produced under conditions not available to the ordinary dairyman, should be given to understand that such additional care is entitled to adequate remuneration.

Locally, the real estate exploiter, by enhancing the value of lands adjacent to the city, has driven the dairyman farther afield, until the bulk of our milk is brought from a considerable distance, and even from the States to the south of us.

It is not necessary to discuss in a paper of this kind, the commercial aspect of this, but simply to point out that by proper attention to detail, it is possible to bring milk a considerable distance and have it arrive in a satisfactory condition.

Purity.

Under the Public Health Act of Manitoba, milk is described as the fresh, clean and unaltered product, obtained by the complete, uninterrupted milking, under sanitary conditions of one or more healthy cows, properly fed and kept, excluding that obtained within two weeks before calving and one week after calving, and containing not less than 3.25 per cent. of butter fat and not less than 8.50 per cent. of solids other than fat. Milk being a perfect medium for the growth of disease germs, it is important that it should be as near sterile as possible when produced, or at any rate free from disease germs.

The cows should therefore be tuberculin tested and otherwise in good health. The udder should be examined for garget or udder trouble. The feed should be wholesome, and the water supply above suspicion.

It is essential that the cow should be not only clean, but any dust or loose hair should be wiped off the udder, teats and flanks; if clipped, this will aid in keeping the animals clean.

The stable should be provided with a floor impervious to moisture, should be for cows only, and have adequate air space, light and ventilation. Feeding should not be done till after milking, the dust of the stable having been settled with a watering can previous to milking.

Manure should be removed twice daily to a considerable distance from the stable, and the stable whitewashed as often as necessary.

The persons milking should be cleanly in dress and person, should wash their hands before milking and don a clean jacket of washable material.

Milking should be done with dry hands into a small topped pail, rejecting the first few streams, as bacteria are liable to lodge in the duct of the teat. The milk of each cow should be immediately removed to a suitable milk house, some distance from the stable, strained and cooled down to below 50 degrees, and kept as near that temperature as possible till required for consumption.

All utensils used in the production of milk should be as far as possible seamless or the seams well filled, and should be of tin or enamelled ware. They should be thoroughly scrubbed and scalded, and put out in the sun to air in an inverted position.

The milk house should be provided with facilities for cooling the milk and scalding the cans, and should have a smooth floor, and walls for a foot high impervious to moisture; it should be provided with adequate light, ventilation and drainage.

The vehicles for the conveyance of milk should be fly and dust proof.

Where feasible, it is preferable to bottle the milk on the farm. The practice of mixing milk on dust laden streets cannot be too strongly condemned. It is very necessary that all persons engaged in handling milk should be in good health, and no person affected with a contagious or infectious disease allowed to handle the milk.

In addition to the above precautions, when certified milk is produced, the cows must be tuberculin tested, and the persons engaged examined periodically by a medical practitioner. A specified amount of air space and light is required for the stable. The milk should be cooled to 45° within half an hour after milking, and kept at that temperature till delivered to the consumer. The milk shall contain 3.5 per cent. butter fat, and shall not contain more than 10,000 bacteria, from 1st of June to October, nor more than 5,000 bacteria from 1st of October to June, and shall be free from pus, blood or disagreeable taste.

Food Value or Constituents.

Milk is the secretion of the mammary glands. The milk of different animals is used by man, but cows' milk is the most universally used, and when referring to milk, it is understood that cows' milk is meant.

The constituents of the milk of different cows vary, according to age, breeding, feeding and environment.

Milk also varies according to how it is drawn from the cow, the last milk or stripping being much richer than the first milk, also according to the lactation period; as

the lactation period advances the milk gradually becomes richer. As a rule milk contains about 88 per cent. of water, 3 to 4 per cent. of fat, and 8.50 to 9 per cent. of other solids, composed of casein, albumen, sugar and ash.

When milk is allowed to stand, the lighter portion, consisting of the large globules of fat, rise to the top, forming cream, the remainder of course being skimmed milk. The same result may be obtained by centrifugal force, sending the heavier portion to the outside, and leaving the lighter portion in the centre; this is called separating milk. Milk is heavier than water, and has a lower freezing point. The weight of milk in relation to water can be illustrated by saying that if you had a vat containing 1,000 lbs. of water at a given temperature, the same vat would hold 1,027 to 1,130 lbs. of milk at the same temperature. This is called specific gravity.

Price.

As remarked before, while the milk supply should be wholesome, it is necessary that a food so generally used, shall be within the reach of all.

And while asking the dairyman to take certain precautions, and do certain improvements, Health officials should be sufficiently well informed, that they may be able to advise the dairyman in its economical production.

A question quite often asked by prospective dairymen is, which is the best breed for dairying? Considerable hardship has been put upon dairymen when advised by so-called experts, to buy a certain dairy breed, only to find that the highly priced animals are no better, but often inferior, to ones available at a much lower price.

In dairy cattle, strain is more important than breed, and the scale and "Babcock tester" are the sure test of any breed or cow.

Grooming and bedding for cattle cost money, so the dairyman should be advised as to the proper length of stall, and as regards the clipping of the hair from the tail and flanks, so that the animals may be kept clean at as little expense as possible.

It should be pointed out that a cement floor is not only more sanitary, but cheaper than a wooden floor, considering the permanency.

Light and ventilation may be installed at a very little more cost than if they were overlooked; these with a coat of whitewash make a stable a considerably more pleasant place to work in, than it would be otherwise.

When the manure is utilized, it is well to point out the advantages of piling this neatly, so that the fertilizing properties are preserved and the weed seeds destroyed. Near the city this advantage is not so apparent, but the difficulty of keeping cows clean which have to wade through manure should be dwelt upon.

The hardest improvement to get dairymen to adopt, is to wash their hands and don a suitable jacket before milking. The practice of milking after cleaning horses or other dusty work without these precautions is not nice to think about. Most farm hands wear jackets of washable material for working in, and it is not out of place to suggest that they wear a clean one for milking till it becomes soiled, and then using it for ordinary farm work.

Quite often dairymen have no facilities for cooling milk outside of a covered trough at the well. By pointing out the advantage of having a shelter in wet weather, keeping away the flies and dust in the dry weather and protection from the cold in winter, a man may often be induced to provide a suitable milk house, where he claimed before it did not pay.

The advantages of economical feeding should be pointed out; dairymen often have an idea that they can produce rich or poor milk at will.

We know that the quality and quantity of feed affect the quantity of milk only, and not the fat contents during the lactation period, but that proper feeding has a lasting effect on successive lactation periods.

Quite often dairymen feed expensive feeds, as hay and shorts, when inexpensive feeds like corn, silage and roots would give better results. Attention to details such as these have a direct bearing on the cost of production, and incidentally on the price.

The Retailer.

If all milk were bottled, the danger of contamination in the hands of the retailer would be considerably less.

When milk is allowed to be sold loose in stores, several precautions should be observed in the handling.

The first requirement is a well drained ice box, capable of being kept near 50 degrees and specially kept for dairy products.

There should be facilities for thoroughly scalding the utensils, which should be washed once a day and as often as necessary. The measure used in handling the milk should be kept in the ice box away from possible contamination. All persons engaged in the handling of milk should be careful to avoid as much as possible coming in contact with persons affected with a communicable disease.

The Consumer.

But all the precautions of the producer and retailer are to a certain extent nullified if the consumer does not do his part. If milk is received in the bottle, it should be put in the ice box as quickly as possible. Only sufficient should be taken out as required; if any milk is left over it should not be put back into the bottle.

The bottles should be rinsed out as soon as empty. In some cities milk companies are prohibited from receiving dirty bottles.

If loose milk is received, it should be received in a covered receptacle. The practice of receiving milk in an open vessel exposed to dust, flies, etc., cannot be too thoroughly condemned.

Sometimes housekeepers complain in hot weather of milk going sour. This is often due to the fact that the air of the ice box, though it seems cold in comparison with the outside air, is not sufficiently cool to check the growth of bacteria.

Methods of Preserving Milk.

It is evident that nature never intended milk to see the light of day, certainly never to be collected and fed a day or two old, else it would seem that milk would have been protected with some protective power against contamination. True it is that milk is apparently lower in bacteria a few hours after milking than when first milked, if kept free from outside contamination, but if there is any inhibitive power it is soon lost, and the bacteria increase rapidly afterwards.

Many bacteria find milk a suitable food. In making use of this the sugar is chemically changed. Some bacteria form acids and gases; among these is a large group of closely related bacteria, which cause the souring of milk by breaking up the sugar into lactic acid, and on account of this they are called lactic acid bacteria.

Fortunately their growth is retarded at a temperature below 50 degrees Fahr., so that it is comparitively easy to keep milk sweet for a considerable time if kept below that temperature.

As it is not always feasible to keep milk at this temperature, various measures have been adopted with a view to preserving milk, of these sterilization and pasteurization are the best known.

Sterilization consists of heating milk up to a sufficiently high temperature, and keeping at that temperature sufficiently long to kill all bacteria. Objections have been taken to this, as it has a tendency to render the milk unpalatable, and by altering the constituents of the milk, make it incapable of supplying nourishment for young children in the required form.

Pasteurization.

Consists of heating milk to 140 to 145 degrees for twenty minutes (at which temperature and time all the known organisms of specific diseases are killed), and cooling to 45 degrees, at which time it shall not contain more than 10,000 bacteria per c.c.

Pasteurization has come to be regarded as the great safeguard of a milk supply, if properly carried out.

While in theory it should not be necessary to pasteurize milk, in actual practice we are confronted by a condition—not a theory, and it is hard to conceive of an inspection so thorough, even if funds were available, or so high an intelligence on the part of the producer, as not to require additional safeguards. Especially is this true when we remember that disease germs are constantly wafted to and fro in the air, that the advent of an apparently healthy individual who may be a typhoid carrier cannot be guarded against, we must own that a process which without deteriorating the milk, guards against contamination, has a considerable advantage over the raw product. On the other hand it is objected that the farmer is apt to think that any kind of milk is good enough to be pasteurized, oblivious of the fact that no amount of pasteurizing can make dirty milk clean.

Homogenized Milk.

Homogenization may be described as a process whereby the constituents of two or more liquids having different specific gravity, are interlocked, so that the resulting parts are of the same consistency.

As remarked before, milk on standing soon separates into cream and skim milk. It was with a view to preventing the separation of the fat globules and the milk that the homogenizer was invented. This is especially useful in canned and bottled goods, as the separation of the different parts rendered them unsightly.

Another advantage is that for children, the fat is evenly distributed throughout the milk, also that when distributing the milk from an urn, the top portion will not be richer in fat than the lower.

Re-Emulsified Milk.

Another source of milk supply which is already playing a large part in the milk supply of the West is re-emulsified milk.

This consists of taking milk powder, which is the dried solids of skim milk, adding sufficient water to bring it up to the standard of skim milk, and to this is added butterfat, consisting of unsalted butter, sufficient to bring it up to the standard of milk or cream as desired.

This emulsion is put through the homogenizer and the result is a product closely resembling pasteurized milk. If the water, milk stock and butter used are pure and wholesome, the result is a product which can hardly be objected to from a sanitary standpoint.

While fully aware of the limitations of this paper, I still hope that some of you may have gleaned a few facts, which possibly at some future date, may be of use to you in controlling a municipal milk supply.

MONTHLY JOTTINGS

THE Winnipeg Branch of the Association is enjoying very attractive programmes on Saturdays from 12 to 1 o'clock. The attendance is good. Some of the papers read and to be read this season, are as follows: Arithmetic in Sanitary Work; Pasteurization of Milk; Inspection of Cheese and Butter; Smoke Nuisances, Their Abatement and Prevention; The Practical Side of Tuberculine Testing; Sanitary Law; Principles and Design of Plumbing; Municipal Food Inspection; Methods of Inspection; Factors in Certified Milk Production; etc. The papers are read on alternate Saturdays, the other Saturdays being devoted to answering questions previously set and allocated to various members. A good discussion is usually had.

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We invite news from other centres as to the work being carried on among the members.

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Last month we printed a list of our members who had enlisted for active service. P. H. Meiklejon, of Moose Jaw, Sask., and J. T. Robertson, of Winnipeg, Man., have to be added to the list. If there are any others we will be glad to know.

* * *

We have not heard of any reductions of Health Department staffs as a result of the general drawing in of civic purse strings. This determination not to impair the efficiency of the public health service is very creditable and indicates that municipal authorities are realizing more fully the importance of the work being accomplished.

* * *

There may be a disposition on the part of some municipalities to reduce appropriations for scavenging and street cleaning. If money can be saved without impairing the efficiency of the service well and good, but to curtail the work would be a retrograde step and one very likely to recoil on any municipality short-sighted enough to embark on such a course.

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We notice that recent advertisements for Sanitary Inspectors state that applicants must be properly qualified. This is as it should be.

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Have you renewed your membership yet?